

Table of Contents

- 1. Introduction 3
- 2. Key project results achieved during the reporting period 4
 - 2.1. Closer inter-institutional cooperation with the purpose of fostering the development of the water management decision support system and responsibility for data gathering and updating 4
 - 2.2. Efficient institutional structure of information services in the Central Asian water sector. 6
 - 2.3. Efficient institutional structure of information services in the Central Asian water sector 9
 - 2.4. Increasing information volume and CAWater-Info Portal's capabilities including an online platform of modelling tools..... 14
 - 2.5. Various information products including digital publications regularly disseminated among target user groups and other stakeholders..... 16
- 3. Milestones and outputs of the project 19
- 4. Constraints and lessons learned 20
- 5. Outlooks for 2011. 21
- 6. Annexes..... 22

1. Introduction

The “Central Asia Regional Water Information Base (CAREWIB)” Project was developed in support for the ASBP-1 approved by the decision of the Heads of State on 11 January 1994 (Project 2 – “Data base and management information system for water and environment”) and ASBP-2 approved by the IFAS Board on 28 August 2003 (Item 6 – “Reinforcement of material/technical and legal basis in interstate organizations, development of the regional information system designed to manage water resources of the Aral Sea basin”).

The CAREWIB Project is implemented within the framework of the Swiss Regional Medium-Term Program for Central Asia 2002-2006 in support for “Natural Resources and Infrastructure Management” (Swiss Water Policy for Central Asia 2002-2006); - “Management, Security and Conflict Prevention” (raising transparency and public awareness); - and cross-cutting “environmental” issues (relation between water and environment) in accordance with the Aarhus Convention.

The progress of project activities was considered at the ICWC meetings:

- 37th (22-24 December 2003, Karshi),
- 42nd (28-29 April 2005, Almaty),
- 43rd (2 November 2005, Almaty),
- 46th (8-10 March 2007, Ashgabat),
- 48th (11 October 2007, Khodjent),
- 49th (19 March 2008, Tashkent),
- 51st (17-18 September 2008, Almaty).

The Project is funded by SDC and implemented by SIC ICWC in Tashkent with the assistance of the UNECE and UNEP/GRID-Arendal office in Geneva. The Project Phase-1 started on 1 December 2003 and came to the end on 31 December 2006.

The activities were continued between Phases 1 and 2 during the bridging period, which lasted from 1 January till 31 July 2007. The Project Phase-2 started on 1 August 2007 and came to the end on 31 August 2010.

The main results of activities for the reporting period are involvement of EC IFAS / RHC into the project work and information exchange and, particularly, the creation of a working group on evaluation of information space in Central Asia.

At the same time it is pointed out that the information base of water sector in Central Asia has become a reliable source of reliable information, which has been recognized by experts in different fields and this information base requires further expansion of its information space, taking into account the received suggestions. Further enhancement of information potential of the created unique information system will undoubtedly strengthen the portal demand and will promote the resolution of various difficult issues related to water and environmental problems in Central Asia.

2. Key project results achieved during the reporting period

The achievements on each goal planned in the Project Document are given below.

2.1. Closer inter-institutional cooperation with the purpose of providing development of decision support system in water management sector and responsibility for respective data collection and updating

Result 1.1. Implementing the project assessment by suppliers and users of the region (Ministries, SIC ICWC, BWOs, EC IFAS, RHC(NHMS) with aim to reveal gaps, problems, disadvantages in the information exchange and support development, as well to define new users and other important information suppliers.

State-of-the-art at the beginning of January, 2011: Last assessment by users was implemented at the stakeholders seminar (Almaty, 26 April 2007) before the start of Project Phase 2.

Result Indicators: "The questions list ..."; report, user survey, organizing the Working Group.

Milestones: June 2011

Results of EC IFAS/RHC, SIC ICWC, ICSD:

- Working Group Members have prepared "Report on the analysis of the survey to improve the information service of the water sector in Central Asia"

Results of UNECE, Zoi:

- Analysis of the CAREWIB project external audit of May 26, 2011.

Result 1.2. Elaborating the shared cooperation mechanism within information exchange as a whole

State-of-the-art at the beginning of January 2011: There is no unified common mechanism for cooperation within information exchange.

Indicators: concept, cooperation mechanism

Milestones: August 2011

Results of EC IFAS/RHC:

- Members of the Working Group elaborated the "Concept on Development of information exchange and interaction mechanisms among its participants in Central Asia".

Result 1.5. Developing and testing demo-version of the Aral Sea Basin Management Models (ASB-mm) *provided as in-kind contribution of SIC ICWC*

State-of-the-art at the beginning of January 2011: The local and Internet versions of the ASB-mm model are developed by SIC ICWC.

Indicators: Users are able to simulate any development options

Milestones: the work was done according to plan

Results of SIC, BWO "Amudarya", BWO "Syrdarya":

- The model testing is being implemented and will be finished at the end of 2011.
- For additional information about ASBmm please consult the Annex 7

Result 1.8. Developing and testing the model for estimation and prediction of river flow in the Syrdarya and Amudarya Basins by means of climatic and hydrological historical data series

State-of-the-art at the beginning of 2011: There is no publicly available model for estimation and prediction of river flow in the Syrdarya and Amudarya river basins

Indicators: The analytical tool allows assessing river flow in the Syrdarya and Amudarya river basins

Milestones: the work was done according to plan

Results of SIC, BWO "Amudarya", BWO "Syrdarya":

- A model for estimation and prediction of river flow in the Syrdarya and Amudarya Basins by means of climatic and hydrological historical data series has been developed and tested. This model has been adapted for all main rivers in the Aral Sea Basin.
- Prediction of river flow of Naryn, Karadarya, Vaksh, Zarafshan rivers for vegetation period 2011 was done using available information of database.

Result 1.12. Developing and testing the model of hydrochemical composition of water for Amudarya River (selection of gauging station, river's section, input of data on hydrochemical composition, analysis of hydrochemical balance [in mg-eq], data validation

State-of-the-art at the beginning of 2011: There is no publicly available model of hydrochemical composition of water for Amudarya river.

Indicators: Analytical tool for calculation of hydrochemical composition of water for Amudarya river.

Milestones: the work was done according to plan

Result of SIC:

- A model of hydrochemical composition of water for Amudarya river has been

developed. Currently this model is being tested for the Amudarya river sections "Kerki-Darganata" and "Tyuyamuyun-Samanbay".

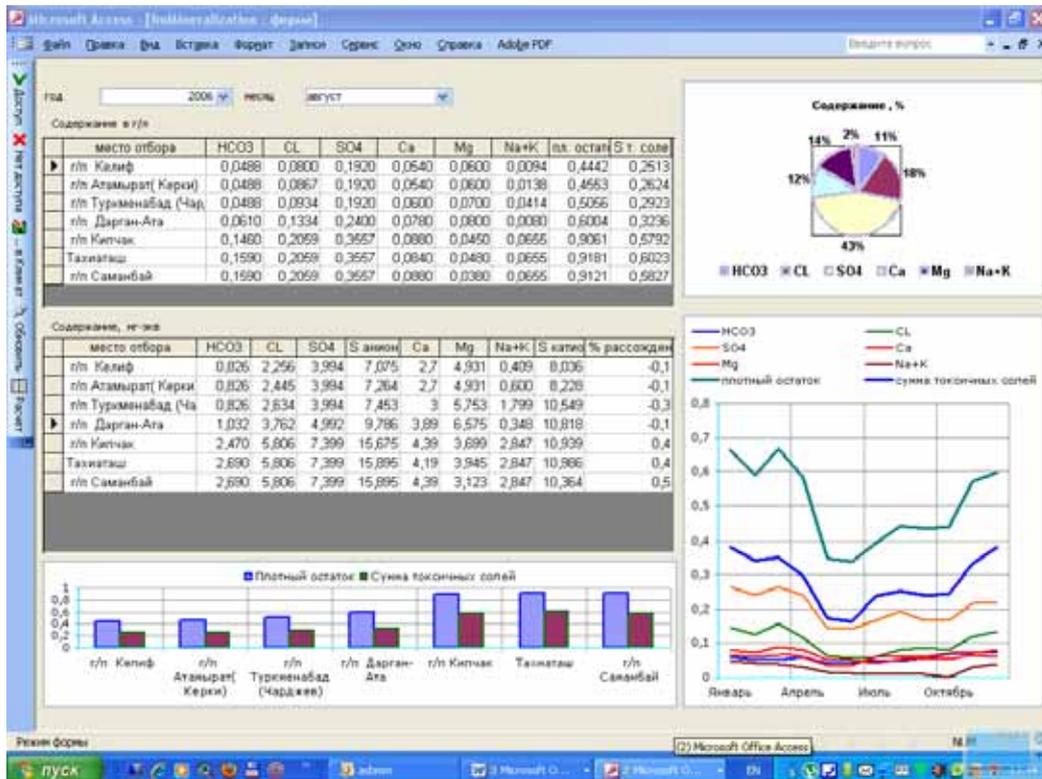


Fig. 1. Model of hydrochemical composition of water for Amudarya river

2.2. Efficient institutional structure of information services in the Central Asian water sector

Result 2.1. Improving the “political” structure: recognizing CAREWIB as the official system for recording, collecting, using and analyzing data, and modelling of water and land resources of Central Asia by IFAS and other major regional and national organizations.

State-of-the-art at the beginning of January 2011: CAREWIB is used as the information resource by five national water management organizations - founders of ICWC.

Indicators: CAREWIB is used as the official information resource by five national water management organizations, Ministry of Foreign Affairs of the Republic of Uzbekistan, the Embassies of the Republic of Uzbekistan in various countries etc. (Annex 6).

Milestones: the work was done according to plan

Results of SIC, ICSD, UNECE, Zoi:

- The CAREWIB potentials are presented at meetings attended by representatives of IFAS, ICWC, ICSD, EurAsEC, various ministries and other organiza-

tions.

- A meeting with participation of Zoi and EC IFAS was held (Geneva, March 2011).

Result 2.2. Broadening the “geographical” structure: establishing cooperation with Afghanistan for information exchange.

State-of-the-art at the beginning of January 2011: A Database on water resources of Afghanistan for 1960-1970 is available on the portal.

Indicators: 100% of planned activity is implemented.

Milestones: the work was done according to plan.

Results of UNECE, Zoi:

- A draft agreement on strengthening cooperation between Tajikistan and Afghanistan in the Pyandj river basin has been prepared.

Result 2.3. Improving the "executing" structure: regular dialogue with partners relevant for further collaboration on implementing the project and for information support (national authorities in the region, donors, projects, ICSD, RHC, NHMS of CAR).

State-of-the-art at the beginning of January 2011: Cooperation on regular information exchange with 59 organizations is organized within EECCA water management organizations network.

Indicators: 59 of EECCA water management organizations, research institutes, planning organizations participate in information exchange on regular base. 100% of planned activity is implemented.

Milestones: the work was done according to plan

Results of SIC, ICSD, UNECE:

- EECCA's water management organizations, research institutes, planning organizations participate in information exchange on regular base.

Result 2.4. Improving the support structure (cooperation with donors and international organizations).

State-of-the-art at the beginning of January 2011: Cooperation with WWC, ICID, INBO, GWP CAR and others is organized.

Indicators: 100% of planned activity is implemented.

Milestones: the work was done according to the planned term

Results of SIC:

- Cooperation with the World Water Council, the International Commission on Irrigation and Drainage, the International Network of Basin Organisations, the

Global Water Partnership of Central Asia and Caucasus, the International Office for Water is prolonged:

- The Websites of those organizations are updated on the CAWater-Info portal; publications are translated into Russian language and placed on the portal.
- The website for International Conference "Towards the 6th World Water Forum — Cooperative Actions for Water Security" (12-13 May 2011, Tashkent, Uzbekistan) is created and placed on the CAWater-Indo portal.



Fig. 2. Website of International Conference "Towards the 6th World Water Forum — Cooperative Actions for Water Security"

Results of ICSD, UNECE, Zoi:

- Including information about the CAREWIB project results and activities into international documents and investigations, including into "Second assessment of transboundary waters" (UNECE towards international conference "Environment for Europe"), "Environment and security in the Amudarya river basin" (Initiative "Environment and security").
- A concept of regional meeting on the water and environment information exchange in Central Asia.
- Strategic investigation of prospects and opportunities to organize information exchange in the region has been initiated.

Result 2.5. Cooperation with other data owners

State-of-the-art at the beginning of January 2011: For past years there were one-time communications with other data holders

Indicators: The reports and publications on the CAWa project, GIZ program and RHC/Kazhydromet.

Milestones: the work was done according to plan

Results of SIC:

- Publications of RHC/Kazhydromet are placed on the portal.

2.3. Broadening IS's volume and improving access to the Information System, as well improving mechanisms of data collection and information retrieval at the regional and national levels

Result 3.2. Inclusion of Afghanistan's data into the IS

State-of-the-art at the beginning of January 2011: The portal has a section, which is dedicated to Afghanistan with DB on rivers for 1960-1970.

Indicators: New data is added to the database and to the knowledge base on Afghanistan.

Milestones: the work was done according to plan

Results of SIC:

- Database contains hydrologic information on 22 rivers and 148 gauging stations of Afghanistan.
- Reports, articles, monographs concerning Afghanistan are added into the Knowledge Base.

База данных



- [Реки Афганистана](#)
- [Гидрологические станции](#)
- [Данные по качеству воды, бассейн р. Кабул \(июль 2004 - июль 2007\)](#)
 - [часть_1 \(pdf, 206 кВ\)](#)
 - [часть_2 \(pdf, 56 кВ\)](#)
- [Карты провинций](#)
- [Политическая, административная и физическая карты](#)
- [Карты речных бассейнов](#)
- [Карты расположения плотин](#)
- [Карты расположения водохранилищ](#)
- [Исторические карты](#)

База знаний

- [Книги, отчеты, монографии](#)
- [Статьи](#)
- [Международные соглашения с участием Афганистана](#)
- [Рекомендательные документы и руководства](#)
- [Резолюции Совета Безопасности ООН](#)

Fig. 3. Sections on Afghanistan: "Database" and "Knowledge base"

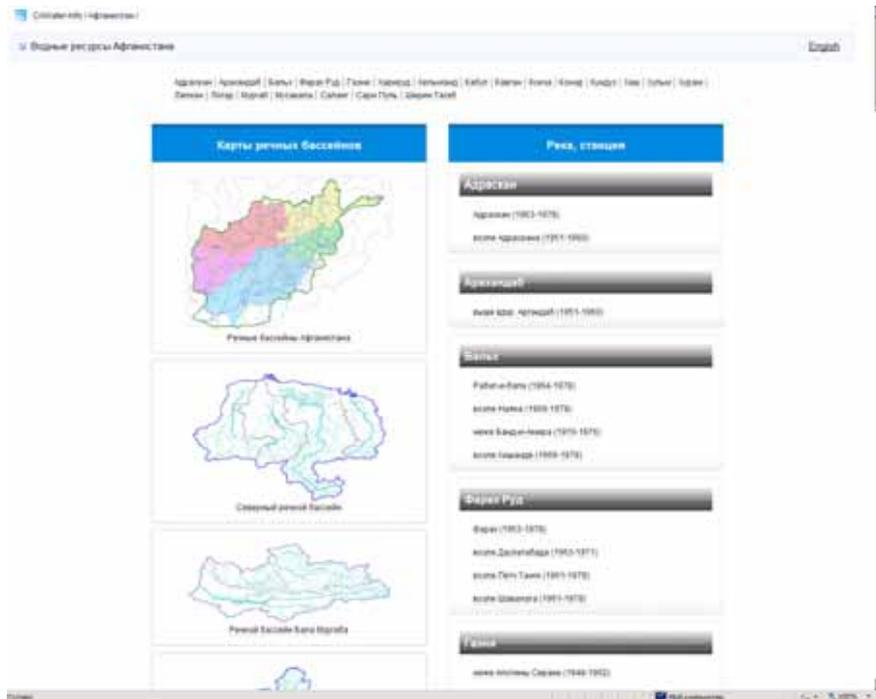


Fig. 4. Database on rivers of Afghanistan

Result 3.3. Updating the DB with new information according to the model's and GIS's requirements, as well with current information related to the developed sections of DB.

State-of-the-art at the beginning of January 2011: Regional IS is placed on the portal and it consists of 2 databases (DB on sectors and DB on objects) and GIS-block with information from 1980 up to the present time

Indicators: The database volume is increased by the added data for 2010-2011.

Milestones: the work was done according to plan

Results of SIC:

- Data for 2010 and partially for 2011 is added.

Results of 5 NFPs:

- Data on each country for 2010-2011 is added into the regional IS.

Result 3.5. Spatial visualization of databases' regional statistics through GIS-interface

State-of-the-art at the beginning of January 2011: The present GIS-interface has no function for visualization of database's regional statistics

Indicators: on-line GIS-map of the Aral Sea Basin

Milestones: the work was done according to plan

Results of SIC, Zoi:

- A personnel training in Tashkent was held (under the co-sponsorship by GTZ).
- The on-line maps (Fig.5) are made on the available GIS-base and are currently accessible within the SIC internal network; these maps will be available for all users at the end of 2011.

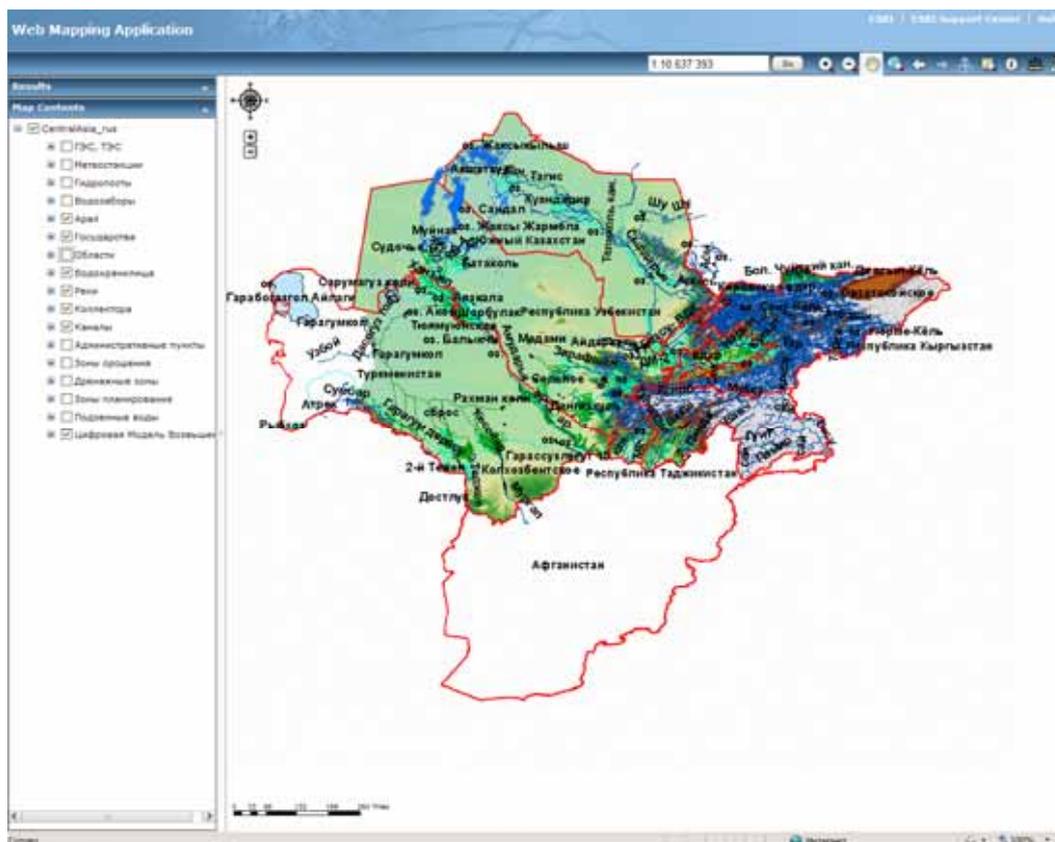


Fig. 5. On-line map of the Aral Sea Basin

Result 3.6. Preparing the seasonal analytical reports for the ICWC members

State-of-the-art at the beginning of January 2011: Analytical reports for vegetation and non-vegetation periods are available on the website since 2008

Indicators: the analytical reports are available on the portal. 100% of planned activity is implemented.

Milestones: the work was done according to plan

Results of SIC:

- The following reports are placed on the portal:
 - Monitoring of the wetlands' area dynamics in the Southern Priaralie (April - June 2011)

Results of BWO “Amudarya” and BWO “Syrdarya”:

- Information about actual water balance on the river sites and reservoirs, lateral inflow, analysis of actual distribution of transboundary water flow, transboundary flow allocation, water withdrawals and main canals compared with the water limits, prognosis of reservoirs' operation mode in the Aral Sea Basin has been provided to SIC.

Results of 5 NFPs:

- The analytical reviews were downloaded from the portal and were given to administration regularly.

Result 3.7. Regular providing water management organizations with analytical reports where hydrometeorological data is correlated with water management information and analysis of river channel and basin balances.

State-of-the-art at the beginning of January 2011: Analytical reports available on the portal have no information from RHC/NHMS

Indicators: The forecasting information of NHMSs of Kazakhstan and Uzbekistan is available on the portal.

Milestones: the work was done according to plan

Results of SIC:

- Analysis of possible scenarios of inflow to the Toktogul and Andijan reservoirs for the vegetation period in 2011 is placed on the portal

Results of RHC:

- The following information of NHMSs was placed on the portal:
 - Forecast of river runoff in the irrigated zone of Kazakhstan for vegetation period 2011 (information of Kazhydromet)
 - Precipitation amount in the Amudarya and Syrdarya river basins for October 2010 - March 2011 and the preliminary forecast of water discharges in the rivers of the Amudarya and Syrdarya river basins for vegetation period (April-September) 2011 (information of Uzhydromet)

Result 3.8. Monitoring of national information systems creation and consulting of NIS's developers.

State-of-the-art at the beginning of January 2011: A series of training and regional seminars were held in 2007-2010.

Indicators: 1 national seminar was held.

Milestones: the work was done according to plan

Results of SIC:

- A national seminar was held in Kazakhstan (7-9 June)
- The maintenance of equipment given to the NFPs is done

Results of 5 NFPs:

- Regular communication with water management, ecological and other organizations in the CA countries is organized; information for NISs is being provided regularly.
- Information was introduced into the national and regional information systems.

2.4. Increasing information volume and CAWater-Info Portal's capabilities including an online platform of modelling tools

Result 4.1. Regular gathering, processing and disseminating information on water and environment in CAR.

State-of-the-art at the beginning of January 2011: CAWater-Info Portal has 42 websites, 25,000 web-pages, about 2,600 pdf-documents. Partners have a huge information mass on use of ASB water and land resources which is to be processed and made available through Internet

Indicators: The CAWater-Info portal contains 42 websites with total volume over 25000 pages and about 2650 pdf-documents.

Milestones: The portal is being updated daily; the work was done according to plan

Results of SIC:

- Publications, documents and other information of SIC and partners are added into the electronic library. (see Result 5.1).

Results of 5 NFPs:

- Relevant information about events concerning water management in the Central Asian countries has been provided.

Results of ICSD:

- Publications and agreements are given.

Results of UNECE, Zoï:

- News information is delivered.

Result 4.2. Further development of the Bibliographic Database on Land and Water Resources Use

State-of-the-art at the beginning of January 2011: The Bibliographic Database has 4374 records in Russian and 2960 records in English

Indicators: The bibliographic database has 5232 records in Russian and 3125 ones in English.

Milestones: the work was done according to planned

Results of SIC:

- New bibliographic information in Russian and in English is introduced.

Result 4.3. Further development of the database on foreign water management organizations and donors ("Water Atlas") and of Electronic Directory "Who is who in water management"

State-of-the-art at the beginning of January 2011: DB "Water Atlas" has 634 records

in Russian and in English. Electronic Directory "Who is who in water management" has 440 records in Russian and in English.

Indicators: The Database "Water Atlas" contains 650 records in Russian and in English. The Database "Who is who in water management?" contains 466 records in Russian and in English.

Milestones: the work was done according to plan

Results of SIC:

- New records are added

Results of 5 NFPs:

- Information about personnel of the national water management organizations is collected and given to the SIC for the DB.

Result 4.4. Further development of Knowledge Bases "Land and water resources use in the Aral Sea Basin" and "International and National Water Law"

State-of-the-art at the beginning of January 2011: The Knowledge Base "Land and water resources use in the Aral Sea Basin" has the summaries on 417 pilot projects implemented in the region. The Knowledge Base "International and National Water Law" includes 650 documents.

Indicators: The Knowledge Base "The Aral Sea Basin water and land resources use" contains generalized information about 559 pilot projects implemented in the region earlier. The Knowledge Base "International and National Water Law" contains 706 documents.

Milestones: the work was done according to plan

Results of SIC:

- Information about 142 projects implemented in the region during 1960-1980 is added into the Knowledge Base "The Aral Sea Basin water and land resources use".
- 56 new documents are added into the Knowledge Base "International and National Water Law".

Results of ICSD:

- Relevant information has been given for the knowledge bases.

Result 4.5. Further development of Knowledge Base "Integrated Water Resources Management: Central Asian practice"

State-of-the-art at the beginning of January 2011: The Knowledge Base "Integrated Water Resources Management: Central Asian practice" has 581 documents

Indicators: The Knowledge Base "Integrated Water Resources Management: Central Asia case study" contains 597 documents.

Milestones: the work was done according to plan

Results of SIC:

- Documents of the "IWRM-Fergana" project are added into the Knowledge Base.
- New documents are added into the Knowledge Base of the "Water Productivity Improvement at the Plot Level (WPI-PL)" project.

Results of 5 NFPs:

- Relevant information for the KB is provided

Result 4.6 Further development of the portal's section in national languages of Central Asia

State-of-the-art at the beginning of January 2011: Material translated into national languages of CA countries as well as information of national water management organisations are placed on the CAWater-Info portal.

Indicators: The section in national languages contains 1325 documents.

Milestones: the work was done according to plan

Results of SIC:

- The national teams were assisted with the introduction of information.

Results of 5 NFPs:

- Material translated into national languages of the Central Asian countries is presented.

Result 4.7. Making the Portal fully bilingual (Russian and English).

State-of-the-art at the beginning of January 2011: Information in Russian is still prevailing in some sections of the portal (percentage of materials in English: 100% - all DBs and KBs; 60-100% - other sections).

Indicators: The increased information volume of bilingual site with good quality translation into English language.

Milestones: the work was done according to plan

Results of SIC:

- Translation of the material in the portal from Russian to English is made regularly.

2.5. Various information products including digital publications regularly disseminated among target user groups and other stakeholders

Result 5.1. Publication and dissemination of non-periodic issues

State-of-the-art at the beginning of January 2011: 336 publications of SIC and partners were placed on the portal during the Phase 2.

Indicators: 65 new publications of SIC and partners were placed on the portal (besides the historical ones).

Milestones: the work was done according to plan

Results of SIC, EC IFAS, ICSD, UNECE:

- Various brochures, collected papers and reports have been prepared, published and disseminated (Annex 5);
- The partners' publications in the electronic version were placed on the portal;
- Bulletins, brochures and other information have been disseminated.

Result 5.2. Statistical analysis of downloading information to identify needs of user groups

State-of-the-art at the beginning of January 2011: There are 2 analytical reports on visiting statistics of sites – for 2008 and for 2006-2009 (summarized report).

Indicators: The number of portal visitors has increased and reached 2700-3000 people daily.

Milestones: the work was done according to plan

Results of SIC:

- The visiting statistics for all sections of the portal was being tracked daily (Annex 2):
 - For domain “cawater-info.net” - up to 2700 visits daily
 - For domain “icwc-aral.uz” - up to 300 visits daily
 - For domain “ecca-water.net” – more than 100 visits daily

Result 5.3. Publishing and disseminating periodical issues

State-of-the-art at the beginning of January 2011: “CAWater-Info News” bulletins, ICWC press-releases (in Russian and in English), INBO bulletins are regularly published and disseminated.

Indicators: 30 "CAWater-Info News" bulletins and 3 ICWC press-releases have been disseminated through the Mailing List.

Milestones: the work was done according to plan

Results of SIC, ICSD:

- "CAWater-Info News" bulletins and ICWC press-releases are being disseminated only electronically through the portal and the Mailing List.
- 30 "CAWater-Info News" bulletins and 3 ICWC press-releases have been disseminated through the Mailing List.

Result 5.4. Preparing and disseminating CDs with digital training materials

State-of-the-art at the beginning of January 2011: 5 CDs are issued.

Indicators: 3 updated CDs, 1 new CD created

Milestones: the work was done according to plan

Results of SIC:

- The earlier prepared CDs have been updated:
 - CD with the Knowledge Base "Using Land and Water Resources of the Aral Sea Basin"
 - CD with the Knowledge Base "Integrated Water Resources Management: Central Asia case study"
 - CD with the Knowledge Base "International and National Water Law"
- CD with the supporting information for round-tables of the International Conference "Towards 6th World Water Forum - Cooperative Actions for Water Security" (May 12-13, 2011, Tashkent) is prepared and issued.

Result 5.5. Digitization and publication of rare and ancient books, maps etc., from the partners' archival depositories.

State-of-the-art at the beginning of January 2011: SIC and partners have rarities and ancient books, maps etc. in their archival depositories

Indicators: 9 digitized archival materials.

Milestones: the work was done according to plan

Results of SIC, ICSD:

- Rare and ancient books available in the archives are digitized: 9 in Russian (Annex 3).

Result 5.7. Preparing and publication of materials on the environmental indicators

State-of-the-art at the beginning of January 2011: ICSD has material on environmental indicators

Indicators: Increased number of users because of new content.

Milestones: the work was done according to plan

Results of SIC:

- New section "Indicators of Sustainable Development for Central Asia Countries" is opened on the portal.

Results of ICSD:

- Environmental indicators of Central Asian countries for 1990-2004 are prepared to be published.

Results of UNECE, Zoï:

- Consultations with EC IFAS on preparation of diagrams with indicators of sustainable development for Central Asia were conducted (presentation of diagrams requires the EC IFAS decision).



Fig. 6. Section “Indicators of Sustainable Development for Central Asia Countries”

3. Milestones and outputs of the project

The table below shows the most important results and milestones for the reporting period.

| Item | Place | Date |
|---|----------|------------------|
| External review mission of the CAREWIB project | CA | 19 April - 5 May |
| External review of the Swiss support of cooperation in the water sector of Central Asia | CA | 27 April – 5 May |
| International Conference "Towards 6 World Water Forum - Cooperative Actions for Water Security" | Tashkent | 12-13 May |
| Meeting with Ms. Veronique Hulmann and Ms. Santi Vege | Tashkent | 14 May |
| Training seminar on GIS-technologies (Zoi) | Tashkent | 22-27 May |
| National seminar in Kazakhstan | Astana | 7-9 June |
| Work meeting of EC IFAS, SIC ICWC, RHC, Kazhydro-met | Almaty | 15-16 June |

| Item | Place | Date |
|--|----------|---------|
| Meeting of SIC project's staff on the organizational issues (under the leadership of Prof. V.A. Dukhovny). | Tashkent | monthly |

4. Constraints and lessons learned

Some of External Review remarks:

- improperly defined access rules to the information database on CAWater-info;
- no meta-information about data in IS;
- small period of initial access to IS (1980-1985);
- lacking accuracy of reported data.

Comments of CAREWIB team:

- The database information access rules are given in the Guidance on CAREWIB Database use online (www.cawater-info.net/library/rus/carewib/guidebook_dbase.pdf);
- meta-information about data in IS was added at enter page of IS and home page of CAWater-Info portal;
- now period of initial access to IS is increased till 1980 to 2000; 30% of data have the full access (1980-present) for all users;
- most part of data were checked and improved.

User Survey findings¹:

1. CAWater-Info portal is a unique information platform in the region and the demands for its services are slowly but steadily increasing.
2. The use of CAWater-Info information resource, as a source of information on water and land, and many other issues become more and more important among a broad range of professionals and the general public.
3. From technical point of view the CAWater-Info portal is well designed and equipped; navigation through the site does not cause any difficulties. Designers have selected the optimum size of the fonts and visual aids. The site is well positioned in terms of information that can be downloaded, formats of available information also meet modern requirements.
4. The main type of provided information is the files in the doc- and pdf- format. However, the site has the needed information (tables and diagrams) that can

¹ Please, see "Report on results of analysis of the survey on improving informational service in the water sector of Central Asia"

not be downloaded (html. and htm). For additional convenience, this information should be provided also in other formats.

5. In order to improve this information portal it is needed to increase the number of reliable information sources through greater collaboration with government agencies and services that may be sources of such information. Also, collaborative work with media would positively influence the site content.
6. Citing information sources that increase credibility to information is needed.
7. The portal library has an extensive collection of books, but most of them is devoted to legal and legislative aspects, the scientific and applied fields should be extended .
8. For the information exchange development in the water-environment field, firstly, the Agreement "Regarding the formation and functioning of national, basin and regional databases on integrated use and protection of water resources in the Aral Sea Basin" is needed to be adopted by the Governments of Central Asian countries as soon as possible.
9. BLOG is a prompt and easy way to debate and discuss specific issues and problems of information exchange on development of strategies at the professional level. It is supposed to use the blog mechanism for exchange of views currently and also for development of recommendations and the concept of information field in the coming months.

5. Outlooks for 2011

1. Further information exchange in water-environment area in the region should be focused on improvement of the CAWater-Info Portal and CAREWIB Information System on the basis of stakeholders' participation principle (BWOs, EC IFAS + RHC and NHMS; SIC ICSD + environmental agencies, CDC "Energy") and uniform methodical principles and engineering tools.
2. It is advisable to continue the project work plan, taking into account the expressed wishes of users.

6. Annexes

Annex 1. List of Abbreviations

Annex 2. Statistics of the portal visits

Annex 3. List of old books available through the portal.

Annex 4. List of workshops conducted under project

Annex 5. List of publications

Annex 6. List of websites, which referred to the CAWater-Info portal.

Annex 7. Information about Aral Sea Basin Management Models (ASB-mm)

Annex 1. List of Abbreviations

| | |
|------------------------|--|
| ASB-mm | Aral Sea Basin Management Model |
| GWP CACENA, GWP CAR | Global Water Partnership for Caucasus and Central Asia |
| SDC | Swiss Agency for Development and Cooperation |
| UNECE | United Nations Economic Commission for Europe |
| WUA | Water Users Association |
| ASB | Aral Sea Basin |
| BWO | Basin Water Organization |
| DB | Database |
| WWC | World Water Council |
| EC | Executive Committee |
| IS | Information System |
| ICWC | Interstate Commission for Water Coordination in Central Asia |
| ICSD | Interstate Commission for Sustainable Development |
| INBO | International Network of Basin Organizations |
| MAWR | Ministry of Agriculture and Water Resources |
| IFAS | International Fund for Saving the Aral Sea |
| NHMS | National hydro-meteorological services of Central Asian states |
| SIC | Scientific-Information Center |
| NIS | National Information System |
| NFP | National Focal Point |
| NGO | Non-governmental organizations |
| ASBP | Aral Sea Basin Program |
| CAR | Central Asian Republics |
| RHC | Regional Hydrological Center of EC IFAS |

Annex 2. Statistics of the portal visits

cawater-info.net

| Month | Unique visitors | Number of visits | Pages | Hits | Bandwidth |
|---------------|-----------------|------------------|---------|---------|-----------|
| January 2011 | 28225 | 61773 | 516974 | 1022102 | 38.74 ГБ |
| February 2011 | 31687 | 62763 | 525754 | 1075422 | 49.37 ГБ |
| March 2011 | 31791 | 62317 | 489118 | 1013839 | 35.99 ГБ |
| April 2011 | 31394 | 60370 | 500830 | 1105218 | 39.73 ГБ |
| May 2011 | 32508 | 61119 | 462220 | 1063916 | 39.24 ГБ |
| June 2011 | 24755 | 51835 | 397580 | 841147 | 33.93 ГБ |
| Total | 180360 | 360177 | 2892476 | 6121644 | 237 ГБ |

icwc-aral.uz

| Month | Unique visitors | Number of visits | Pages | Hits | Bandwidth |
|---------------|-----------------|------------------|-------|--------|-----------|
| January 2011 | 3226 | 8160 | 14856 | 40622 | 650.70 MB |
| February 2011 | 3293 | 7961 | 15457 | 43477 | 602.79 MB |
| March 2011 | 3666 | 8084 | 14510 | 46661 | 869.40 MB |
| April 2011 | 4301 | 8877 | 16802 | 60443 | 940.27 MB |
| May 2011 | 4974 | 9050 | 14674 | 64612 | 1.02 GB |
| June 2011 | 3799 | 6873 | 11226 | 51354 | 866.00 MB |
| Total | 23259 | 49005 | 87525 | 307169 | 4, 85 ГБ |

Annex 3. List of old books available through the portal

In Russian

1. Irrigation in Uzbekistan, Vol. 3.
2. "Herald of irrigation", n 5 (May 1924)
3. "Herald of irrigation", n 6 (June 1924)
4. "Herald of irrigation", n 2 (February 1929)
5. "Herald of irrigation", n 8 (August 1929)
6. "Herald of irrigation", № 12 (December 1929)
7. A.V.Chaplygin - Water management settlement in Zerafshan Valley (1925)
8. I.A.Il'in – Water resources of Fergana Valley (1959)
9. Agricultural land reclamation (1956)

Annex 4. List of workshops conducted under project

| Name of Event | Date | No of days | Place, country | Responsible | Institution | Purpose | Target Audience | Number of Participants (M/F) | Direct Costs (USD) | Direct Costs/Participant/day (USD) |
|--------------------------------|----------|------------|-------------------|-------------|-------------|---------------------------------|-------------------|------------------------------|--------------------|------------------------------------|
| National seminar in Kazakhstan | 7-9 June | 3 | Astana Kazakhstan | Beglov I. | SIC ICWC | Discussion of current situation | NFP of Kazakhstan | 11 (7/4) | 3108 | 283 |

Annex 5. List of publications

The list includes e-publications of SIC ICWC and partners that are disseminated through the portal and mailing lists.

| n | Name | Date | Publisher |
|-----|---|-------|------------------------|
| 1. | Legislative and regulation acts concerning dam safety of Central Asia states | April | "CAREWIB" project |
| 2. | SIC ICWC's Information Collection "Mekong River Commission" | April | SIC ICWC |
| 3. | Handbook on IWRM implementation. vol. 1 Institutionals aspects | April | "IWRM-Fergana" project |
| 4. | Handbook on IWRM implementation. vol. 2 Water management in irrigation systems | April | "IWRM-Fergana" project |
| 5. | Handbook on IWRM implementation. vol.3 Water management in WUAs (manual for WUAs' staff) | April | "IWRM-Fergana" project |
| 6. | SIC ICWC's Abstracts Review No. No. 33 | April | SIC ICWC |
| 7. | Water management and land reclamation: early XX - late XIX (annotated reference, vol. 3) | April | "CAREWIB" project |
| 8. | Water management and land reclamation: early XX - late XIX (annotated reference, vol. 4) | April | "CAREWIB" project |
| 9. | Public Participation in River Basin Management in Switzerland. Fighting against floods | April | "CAREWIB" project |
| 10. | ICWC Bulletin No. 55, April 2011 | May | SIC ICWC |
| 11. | Water Resources Management in Uzbekistan | May | GWP CACENA |
| 12. | Concept Note on Thematic Priority "Guaranteeing Water for Future Generations" | May | SIC ICWC |
| 13. | Concept Note on Thematic Priority "Ensuring Sustainable Drinking Water Supply" | May | SIC ICWC |
| 14. | Concept Note on Thematic Priority "International Cooperation on Transboundary Water Management on the Basis of International Water Conventions" | May | SIC ICWC |
| 15. | Concept Note on Thematic Priority "Adoption of Innovations in Agriculture in Order to Achieve Food Security" | May | SIC ICWC |

| n | Name | Date | Publisher |
|-----|--|------|-----------|
| 16. | Concept Note on Thematic Priority "Risk Management and Water Security" | May | SIC ICWC |
| 17. | Concept Note on Thematic Priority "Integrated Water Resources Management - as a Tool for Balancing Multiple Uses of Water" | May | SIC ICWC |
| 18. | Concept Note on Thematic Priority "Climate Change and Conserving Environmental Capacity" | May | SIC ICWC |
| 19. | D. Ziganshina. The Role and Relevance of the 1997 UN Convention to the Countries of Central Asia and Afghanistan in the Aral Sea Basin | May | SIC ICWC |
| 20. | Rysbekov Yu.Kh.: About two "Water" UN Conventions | May | SIC ICWC |

Annex 6. List of websites, which referred to the CAWater-Info portal

History of the Aral Sea from ancient period up to present
kungrad.com

Center of Register and Cadaster
www.waterinfo.ru

Russian Research Institute of multipurpose use and protection of water resources (RosNIIVH)
www.wrm.ru

Embassy of the Republic of Uzbekistan in Germany
www.uzbekistan.de

Embassy of the Republic of Uzbekistan in the Russian Federation
www.uzembassy.ru

International Forum "A drop of water - a grain of gold" 2010
turkmen-water.ru

Environment and Sustainable Development in Central Asia
www.caresd.net

Association of Crisis Centers of Kyrgyzstan
www.acc.web.kg

VNIIGIM – Web-links
www.vniigim.ru

EvrAzES
www.evrazes.com

Minjust.tj - Ministry of Justice of the Republic of Tajikistan
www.minjust.tj

IWMI-Central Asia
centralasia2.iwmi.org

Embassy of Uzbekistan to The United States
www.uzbekistan.org

Catalogue of web-links
www.vodosbor.ru

Rivertwin
www.rivertwin.de

Embassy of the Republic of Uzbekistan in the Republic of Kyrgyzstan
www.uzbekistan.kg

Chu-Talas Commission
www.chutalascommission.org

Embassy of the Republic of Uzbekistan in the Republic of Kazakhstan
www.uzembassy.kz

Embassy of the Republic of Uzbekistan in the Republic of Tajikistan

www.uzbekistan.tj

Analitika.org
www.analitika.org

Institute for Public Policy
www.ipp.kg

Dniester
dniester.org

Embassy of Uzbekistan to the Indonesia
uzbemb.or.id

Consulate-General of the Republic of Uzbekistan in Bangkok
www.uzbinbkk.com

www.eco-tiras.org - New Association of River Basin Organizations in Eurasia
tiras.vox.md

UNECE - United Nations Economic Commission for Europe
www.unece.org

infoCOM.UZ » Ecological resources of UzNET
infocom.uz

Embassy of Uzbekistan in Belgium, Mission to the European Union
www.uzbekistan.be

Swedish Aral Sea Society
www.aralsjon.nu

Embassy of the Republic of Uzbekistan in the Republic of Azerbaijan
www.uzembassy.az

Embassy of the Republic of Uzbekistan in the Republic of Ukraine
www.uzbekistan.org.ua/

CAWa - Central Asian Water
www.cawa-project.net

Legislation (Lexadin)
www.lexadin.nl

Embassy of the Republic of Uzbekistan in Turkey
www.uzembassy.org.tr

Ambasciata della Repubblica dell'Uzbekistan in Italia
www.uzbekistanitalia.org

Embassy of Uzbekistan in India
www.uzbekembassy.in

Environmental Protection
eun.tut.su

Ministry of Nature Protection of the Kyrgyz Republic
www.nature.kg

Seversk-Donetsk basin water resources management organization

sdbuvr.slav.dn.ua

CenterAsiaConsulting
www.centerasiaconsulting.ru

EcoCentre.tj - Youth Ecological Centre
www.ecocentre.tj

Aarhus Centre of the Republic of Kazakhstan
aarhus.kz

Asia Regional Integration Center
aric.adb.org

International Organization of Ecology and Health "ECOSAN"
www.ecosan.uz

Carec
www.carecnet.org

Shimoni, Alster & Rasiel
www.sar-law.com

GlobaLex - Research Guide on Transboundary Freshwater Treaties and Other Resources
www.nyulawglobal.org

Embassy of the Republic of Uzbekistan in Egypt
www.uzbekistan.org.eg

EMCWA/Amu-Darya
www.yale.edu

Lex Words - All the laws of the world
www.lexwords.com

International Resources
www.ca-laws.info

TajikWater.net (water resources information for Tajikistan)
www.tajikwater.net

Amu Darya Basin Network
www.amudaryabasin.ne

United Nations - DESA News
www.un.org

Parliamentarians Network for Conflict Prevention
www.parliamentariansforconflictprevention.net

GWP ToolBox
www.gwptoolbox.or

Peace & Conflict Review
www.review.upeace.org

UN in Tajikistan
www.untj.org

International Water Resources Reading List - UT Austin

www.ce.utexas.edu

WaterWiki
waterwiki.net

FAO EcoLex
www.ecolex.org

APWF-Knowledge Hubs
www.apwf-knowledgehubs.net

ENVSEC
www.envsec.org

Permanent Mission of the Republic of Uzbekistan to the United Nations
www.un.int

State Committee on Nature Protection of the Republic of Uzbekistan
www.uznature.uz

Annex 7. Information about Aral Sea Basin Management Models (ASB-mm)

Project description

The Project ASBmm is implemented jointly by SIC ICWC (Prof. V.A.Dukhovny) and UNESCO IHE - Institute for Water Education, the Netherlands (Mr. Joop de Schutter). The planned project completion is the end of 2011. Final output: popular version of ASBmm available on-line. Proposed dissemination of the software product: CD.

Potential users

The popular version of ASBmm is designed for users who are studying challenges and ways of the Aral Sea basin development in water, energy, environmental, and socio-economic sectors and enabling the user to “play” scenarios of basin development and climate change, with assessment of destabilizing factors and control actions using a number of indicators.

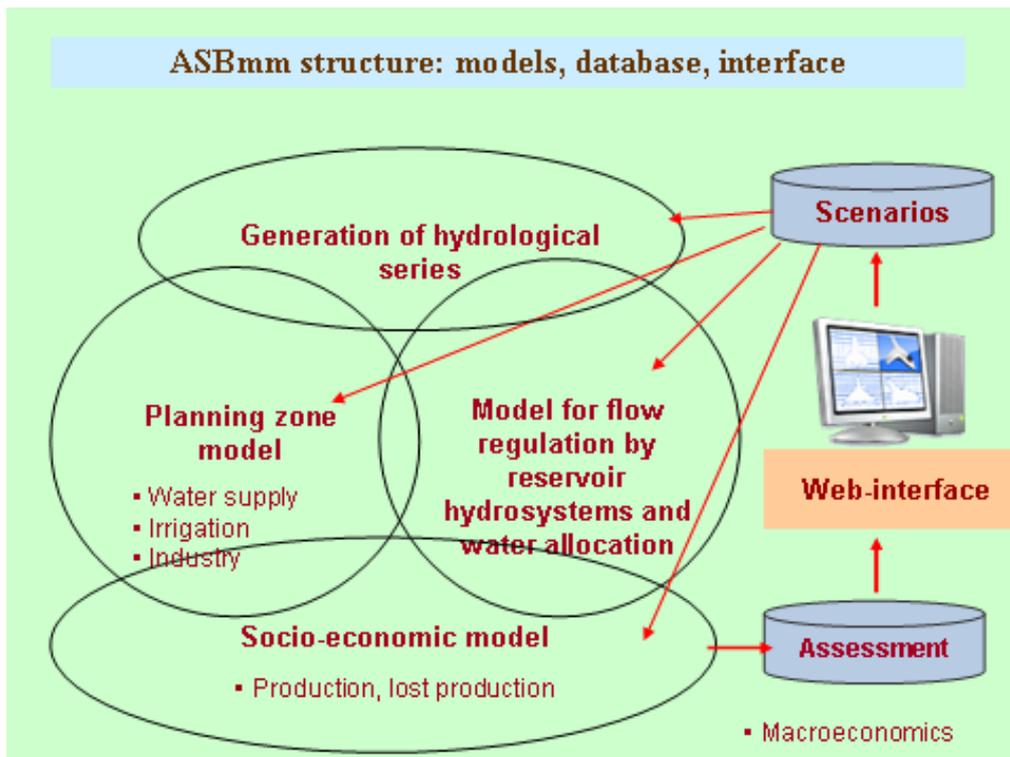
Features

The Internet-based access to ASBmm will enable the user to construct, in context of the integrated scenario created by him/her, various water and energy resources management scenarios for 25 years ahead (2010-2035) for the Syrdarya and the Amudarya basins in general and for provinces (planning zones) of Central Asian countries, taking into account probable scenarios of national socio-economic development and climate change, environmental restrictions and demands (aquatic ecosystems, Aral Sea), cropping pattern scenarios, and strategies of flow regulation by large combined reservoir waterworks and HEPS.

Structure

The ASBmm set of models integrates:

- Socio-economic model (computation of water-management and food balances, economic indicators per country economic sector and water and energy management indicators),
- Model for water allocation and flow regulation by reservoir hydrosystems (computation of water and energy balances of rivers and reservoirs, estimation of water abstractions from transboundary sources),
- Planning zone model (computation of agricultural production, water supply and water balance of irrigated land),
- Database (retrospective data, scenario data, and numerical experiment results),
- Control routine and user WEB-interface.



Model for flow regulation by reservoir hydrosystems and water allocation (WAm ASBmm)

WAm ASBmm (Water Allocation Model) is a specialized computer tool for modeling the processes of flow regulation by large transboundary reservoir hydrosystems for the main rivers in the Aral Sea basin, for allocation surface water between the so-called water-management districts (planning zones) and aquatic ecosystems (wetlands in Prearalie, Aral); the model performs water and salt balance and hydropower computations for Syrdarya and Amudarya basins, based on water-management scenarios on monthly basis up to 2035; the model is developed using GAMS technology to enable solution of the optimization problem of water management, thus contributing to a right choice of water-management decisions.

WAm ASBmm includes:

- Hydrological and water-management schemes of Syrdarya and Amudarya river basins in form of graphs describing flow regulation and distribution network linked to reservoirs, HEPS, planning zones (through intake and outflow), and lakes,
- Algorithms describing functioning of the water distribution system, solving flow regulation and water allocation problems (simulation and optimization problems),
- Target functions (control criteria) and constraints (initial and boundary conditions) as a first approximation allowing the efficient solution of flow regulation and distribution problem,

Planning zone model (PZm ASBmm)

PZm ASBmm is a professional software to compute water requirements in given water-management district (planning zone - PZ) - domestic sector, agriculture, industry; using climatic and water-management scenarios by 2035, the model computes water availability of given planning zones and agricultural production losses as a result of water scarcity, produces water-management balances of planning zones in connection with a river network (WAM model), including water and salt balances of irrigated areas, estimation of return wa-

ter; considers local resources, including groundwater, and flow regulation by local reservoirs.

PZm ASBmm includes the following blocks for:

- calculation of agricultural water requirements,
- calculation of irrigated area's water balance,
- calculation of potential irrigated agriculture production,
- calculation of drainage (return) flow,
- calculation of planning zone's water-management balance (water use per economic sector, local and transboundary sources, etc.),
- calculation of agricultural output losses (in case of water shortage).

Socio-economic model (SEm ASBmm)

SEm ASBmm is a software to build and assess water-management, agricultural and environmental development scenarios for the Aral Sea basin by 2035 in connection with the national socio-economic development scenarios for riparian countries; the model operates jointly with WAm, PZm.

SEm ASBmm accumulates and aggregates outputs from the following models:

- WAm ASBmm – amount and cost of potential electric energy, which is planned and generated in HEPS following to reservoir hydrosystem operation scenarios, as well as generation losses (in case of idle releases),
- PZ ASBmm – amount and cost of potential output planned in national Planning zones (by economic sector) following to development scenarios, as well as output losses (in case of water shortage).

SEm ASBmm assesses per country and Amudarya and Syrdaryabasin:

- Water-management balance,
- Energy balance,
- Nutrition balance,
- Socio-economic situation against a range of indicators, including macroeconomic ones.

Water use is assessed in the following main directions:

- development of household-domestic sector;
- development of real economic sector (excluding agriculture);
- development of agriculture, including irrigation;
- development of energy sector.

Dataware

The database of ASBmm consists of three blocks:

- block to store retrospective information (on available water resources and their use, operation of hydraulic structures, socio-economic indicators of national development, per province – planning zone) - developed on the basis and similar to the CAREWIB information system,
- block to store input data for the models, grouped by three scenarios (business as usual, national development, regional scenario – based on regional integration) parameters and blocks (socio-economic, climatic, hydrological, agricultural, water-management, environmental),
- block to store secondary information on scenarios and modeling results (to exchange data between the models, display and interpret modeling results through the User interface).

Control routine and User WEB-interface

The control routine and the interface couple the models through information flows and link the models with the DB, as well as provide access to:

- forms to select scenarios (climate, development, management), water availability options, view input data, enter new structures (reservoirs, HEPS), set boundaries and regimes, i.e. form the user's scenario,
- commands to run the models (computer routines), form and translate output data,
- output forms - indicators, reports, graphs, and schemes.

For easier use, a menu is provided for staged dialogue "user – computer", for example:

- choose for the future (2010-2035) an option of hydrological series of surface water resources (by water availability indicator),
- choose a climatic scenario (max, min),
- choose a development scenario (business as usual, national vision, regional scenario),
- choose a multiple task from the proposed list and run it.

ASBmm Interface

Each task stipulates its own set of tools (computer models), the special scheme of data input-output and the order of commands; the four main tasks are provided for the popular version:

- assessment of flow regulation by reservoir hydrosystem and of river basin's water and energy balances (with selection of basin) - model WAm ASBmm,

- assessment of water requirements for Planning Zones (with selection of PZ) - model PZm ASBmm ,
- assessment of water availability and agricultural output losses in PZ – chain of models PZm – WAm – PZm ASBmm,
- socio-economic assessment of regional development (by country) – model SEM ASBmm.

The control routine, which keeps simultaneous operation of several users in ASBmm on Internet.

Software

Hardware requirements: computer with back-end configuration, processor P IV 3.3 GHz, memory 4 GB.

Software requirements:

- operating system Windows 2003 Server,
- WEB-server Apache 2.2 or IIS-server,
- Interface development and operating environment – PHP 5 (with additional libraries curl, gd, pear, imagick, xmlrpc,
- Data manager – MYSQL 4,
- Program for high-speed data exchange – FTP server (for instance, proftpd),
- GAMS system

The General Algebraic Modelling System (GAMS) is designed to make the construction and solution of large and complex mathematical programming models for programmers and more comprehensible to users of models from other disciplines, e.g., specialists in water managements, hydrologists, economists. GAMS is specifically designed for modelling linear and nonlinear optimization problems.

Scenarios designing

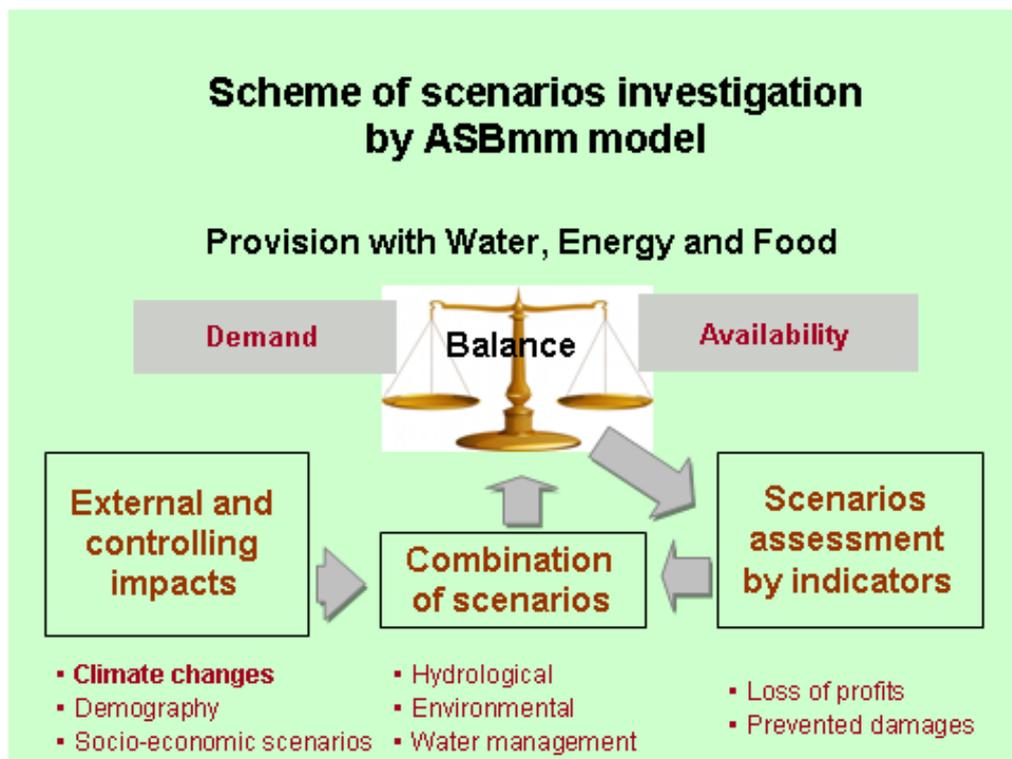
Modern water management situation in the Aral Sea Basin is characterized by some deficit of general solutions at the basin (interstate, intersectoral) level providing sustainable management of transboundary river water resources. Without coordinated activity and guarantees of the states the continuous water delivery of needed volume and regime from the basin level to the national one today is problematic. Our calculation results show that under unfavorable (pessimistic) scenarios of region development the frequency and deepness of irregularity of water delivery to irrigated lands and water ecosystems in the future will only increase under some reasons (factors).

Today possible increase of crisis situation is needed to be halted. For this it is needed to elaborate general strategy of basin development, which has to be linked with national strategies of countries not only on water and electricity but (it is desirable) on main parameters of sectoral efficiency of economies as a whole as well on social safeguards (providing food security, access to drinking water and other, environmental requirements) too.

Each state has a broad spectrum of alternative strategies for existing and future challenges and risks.

Methodical basis of designing such strategies (scenarios) is developed well at the macro-economic level with focus on indicative planning for real economic sector (mining and proc-

essing industry, energy, agriculture, agricultural processing, service industries and others) and increasing of economy development processes - implementing innovations. Indicative planning supposes assessment (forecasting) of achievement of some target indicators of production and successfully connects a role of state with market principles and development mechanisms. The ASBmm model having output of macroeconomic indicators and being as important addition to existing models of countries' economic development serves for detailed complex scenario investigations of water and energy sectors of countries in the Aral Sea basin.



Scenarios of the Aral Sea Basin development for 2011-2035 have to include a few factors determining potential, resources and conditions for water management system functioning, balance (disbalance) of demands and available water and energy resources. The key factors are as follows:

- Natural cyclic fluctuations of surface water resources in the runoff formation zone,
- Climatic influence on the water resources formation processes and needed crop water requirements (anomaly),
- Demographic stress - population growth and increasing requirements of drinking water supply,
- Environmental requirements to river flow,
- Increasing (decreasing) of irrigation areas and changing of crops combination,
- Increasing of energy demands and requirements to operation modes of large reservoir waterworks facilities with HEPS,
- Growth of industrial output and appropriate water demands,
- Requirements for access to drinking water.

Main complexity of Aral Sea Basin development forecasting is conditioned by uncertainty in designing of water management scenarios (including municipal water supply, hydropower engineering, irrigated agriculture and other water users) which consider various options of water resources management and water demands. Uncertainty is connected first of all with

national preferences and priorities - the state plans on development of economic sectors and regional (basin) limitations.

Therefore at the first stage of the Aral Sea Basin modeling it is supposed that the detailed national scenarios are not to be studied but combination of two water management scenarios ("business as usual" scenario and "regional" scenario, which consider the countries interests regarding to their interrelation and regional integration) and two climatic scenarios (scenarios of "minimal" and "maximal" climate change impact) have to be considered.

"Regional" scenario has to provide disseminating of existing experience of IWRM implementation and of automated systems of water distribution management and control, organizational measures for decreasing nonproductive water losses. This scenario has to be real regarding the determined goals (objectives) of development and to be optimistic regarding observance of international agreements and obligations. One of the goal is achievement of potential water productivity in all economic sectors and first of all -in irrigated agriculture and hydropower industry. Special attention has to be paid to formation of rational regimes of over-year and seasonal regulation of runoff by the large reservoir waterworks cascades with HPSs, which operate in compensation mode for each other. Results on this scenario could be certain additional guideline when defining the basin limitations in strategies (scenarios) of national development of basin's states, and could give sustainable and optimistic solutions. "Regional" scenario supposes integration, which actualizes potential of countries development; it has to reveal prospects and benefits of Central Asia countries regional cooperation, which is certain *mechanism of guarantee* of water availability and access. Important indicators, which demonstrate result of development by this scenario are the *prevented damages* in economic sectors if comparing to "business as usual" scenario.

The screenshot shows the ASBmm software interface. At the top left is the ASBmm logo. Below it is a navigation menu with buttons: "Войти", "Выход", "Создать", "Настроить", "Редактировать", "Запустить", "Вывести", "Восстановить", "Удалить", "Закрыть", "Вспомогательные", "Помощь".

Below the navigation menu is a section titled "Информация о проекте" (Project Information). It contains the following text:

- Название: Test for task 1
- Задача: Оценка регулирования стока
- Бассейн: Бассейн Сырдарья
- Планирование климата: Максимальный
- Водность рек 2010-2035: Многоводная
- Развитие: попараметрический

To the right of this section is a table for selecting scenarios:

| ВЫБОР БАСЕЙНА / ЗОНЫ ПЛАНИРОВАНИЯ | СЦЕНАРИИ | | |
|-----------------------------------|---|---|--|
| | ВЛИЯНИЕ КЛИМАТА | ВОДНОСТЬ РЕК 2010-2035 | РАЗВИТИЕ |
| Бассейн Амударья | <input type="radio"/> Минимальный <input type="radio"/> Без изменений <input type="radio"/> Максимальный | <input type="radio"/> Многоводная <input type="radio"/> Со средними <input type="radio"/> Маловодная | <input type="radio"/> Со средними <input type="radio"/> Без изменений <input type="radio"/> Параметрический |
| Бассейн Сырдарья | <input type="radio"/> Минимальный <input checked="" type="radio"/> Без изменений <input type="radio"/> Максимальный | <input type="radio"/> Многоводная <input checked="" type="radio"/> Со средними <input type="radio"/> Маловодная | <input type="radio"/> Со средними <input checked="" type="radio"/> Без изменений <input type="radio"/> Параметрический |

At the bottom of the interface, there is a button "Сохранить и запустить программу расчета" (Save and run the calculation program).

Designing user scenario using ASBmm interface

Investigation of future situation by "business as usual" scenario is based mainly on assessment of risks of water consumption increasing, losses of reservoir capacity, commissioning of

new HPSs and interstate reservoirs, which operate energy modes and implement electricity export outside the Aral Sea Basin.

This scenario can be named as "*pessimistic*", but it can be corrected easily when positive tendencies are observed in the interstate cooperation sphere. The important indicators of development under this scenario are "*loss of profits*" in economic sectors compared to "*regional*" scenario.

Using and developing the model

ASBmm popular version (aspiring to be a IS/DMM tool) created under joint initiative of SIC ICWC and IHE-UNESCO is aimed to various users and has a user interface adapted as much as possible for role-playing games. At the same time the ASBmm is designed as a developing complex of models and from 2012 can be used by experts for researches (in the first version the formation of complex alternative scenarios with using proposed elements as well formation of user own strategy based on their data are provided). We don't consider the first version of ASBmm complex as exclusive professional product because we see potentials and needs for further improving of ASBmm. The IHE-UNESCO support made a possibility to do the first step towards joint professional modeling in the region. Moreover we hope that the open access to the ASBmm model, its original data and scenarios (being formed by CAREWIB data) as well to results of numerical experiments and the role-playing games will give possibility to initiate (through the CAREWIB portal) a broad discussing of problems, perspectives of CA countries development and of modeling methods.