ICWC **SDC**

SIC ICWC **Zoi** **UNECE** **EC IFAS** **ICSD**

CENTRAL ASIA REGIONAL WATER INFORMATION BASE
PROJECT 'CAREWIB'

Report
For September-December 2010

January 2011

Tashkent - Geneva

Table of Contents

1. Introduction

The “Central Asia Regional Water Information Base (CAREWIB)” Project was developed in support of 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 of “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 result of activities during the reporting period was involvement of ICSD (successfully) and EC IFAS / RHC (insufficiently) to information exchange.

About our work:

My third point is how to further enhance the role of cooperation achievable through ICWC? This is an excellent mission. Through its Scientific Information Center (SIC ICWC) many laudable work had been accomplished. Some recent achievements include portals like CAWATERinfo, which focuses in real time water, land and environmental problems of the Aral Sea Basin. Their database providing knowledge tools are amazingly rich. What is apparently missing is the dovetailing of hydropower sectoral interests which is resulting in operation of systems with singular objectives, detriment to basin interests. Can the hydropower sector too find its place to enrich the SIC especially in an attempt to promote the IWRM of the Aral Sea Basin? This can then equip it with the wherewithal to address the problems better, in a scientific manner.

Welcome Speech by ICID Secretary General Gopalakrishnan, International Conference “Transboundary Ecological Problems of Middle Asia: Application of International Legislative Mechanisms for Their Solution”, 16-17 November 2010, Tashkent, Uzbekistan

The ICWC is the best-equipped regional centre, with an IWRM information system supported by UNECE and UNEP/GRID Arendal and with financing from the Swiss Development Cooperation. This system, CAREWIB, currently serves stakeholders in the Aral Sea Basin at the interstate level. The Information System on water and land resources in the Aral Sea basin is designed to support decision-making processes in the water sector in Central Asia. The Information System is a practical tool for comprehensive assessment of the water situation, and a means for dissemination of required data checked and adjusted by the states. It is intended to enable regional and national organisations to transfer to a common “informational language” that will help raise the validity of data being used, and therefore raise the effectiveness of water resources management. There is an operational data system on the Syr Darya River basin that allows users to access information from the previous month48, with a similar system for the Fergana IWRM project.

Regional Water Intelligence Report Central Asia. Baseline Report // Stockholm International Water Institute, Paper 15

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 fostering the development of the water management decision support system and responsibility for data gathering and updating

The main result of the activities under this component was the beginning of the development of the models, which allow to predict the situation with regard to water resources use in the region. The set of models allows calculating alternative development scenarios for the water sector of the Aral Sea, taking into account socio-economic, environmental, energy and climate factors. The development of models will be finalised by the end 2011. The main objective of the Aral Sea Basin Management Model (ASBmm) is to enable decision-makers to evaluate correctness and timeliness of the made decision, and also to show, what consequences it can cause.

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

State-of-the-art at the beginning of September 2010: Last assessment by users was presented at the stakeholders seminar (Almaty, 26 April 2007) before the start of Project Phase 2.

EC IFAS results:

- The work on this sub-component isn't done because the sub-contract on the project works with the EC IFAS was not signed. EC IFAS has requested to move this work to the first quarter 2011.
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Results of SIC ICWC, ICSD, UNECE, Zoi:

- At the NFP's meeting of 26/11/2010, it was decided: "SIC ICWC, five national teams, ICSD, UNECE and Zoi continue all planned work on the project, regardless of IFAS's activity on the organisation of the Working Group".
- It should be noted that the ICSD is actively involved in data exchange.

Indicators:

Milestones: the work wasn't done within the planned term and is postponed to the first quarter 2011.

Result 1.2. Elaborating the shared cooperation mechanism within information

exchange as a whole.

State-of-the-art at the beginning of September 2010: There is no unified common mechanism for cooperation with regard to information exchange.

Results of SIC, ICSD, UNECE, Zoi:

- The shared cooperation mechanism with regard to information exchange has not been developed (because it depends on result 1.1).

Indicators:

Milestones: the work has not been done within the planned term and is postponed to the first quarter 2011.

Result 1.3. Developing analytical programs for assessment of water and food security in the region and in the neighboring countries

State-of-the-art at the beginning of September 2010: There are no publicly available analytical programs of water and food security assessment for the region and neighboring countries.

SIC results:

- The analytical tool (models) development will be completed to October 2011.

Indicators: Analytical program for assessment of water and food security in the region and in the neighboring countries

Milestones: the work will be implemented according to the planned term

Result 1.4. Developing analytical programs for assessment of potential conflicts related to the water-ecology sphere in the region

State-of-the-art at the beginning of September 2010: There are no publicly available analytical programs for assessment of potential conflicts related to the water-ecology sphere in the region.

SIC results:

- Available worldwide analytical tools for assessment of possible water-environmental conflicts were studied.
- "P. Gleik. The chronology of water conflicts from 3000 BC until 2009" is translated into Russian and published in the form of a booklet.

Indicators: Information about analytical tools for assessment of possible water-environmental conflicts is generalized. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

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 September 2010: SIC ICWC has developed the local version of the ASB-mm model.

Results of SIC ICWC, BWO “Amudarya”, BWO “Syrdarya”:

- The online-version (www.asbmm.uz) of the Aral Sea Basin Management Model (ASB-mm) (Fig. 1) is developed; it consists of:
    - Water Allocation Model (WAM)
    - Planning Zone Model (PZM)
    - Social-Economic Model (SEM)
    - Set of water ecosystem models for calculation of water and salt balances of the Aral Sea water areas
- The model debugging is underway andis expected to be finished to before mid-2011

Indicators: Users are able to simulate any development option. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

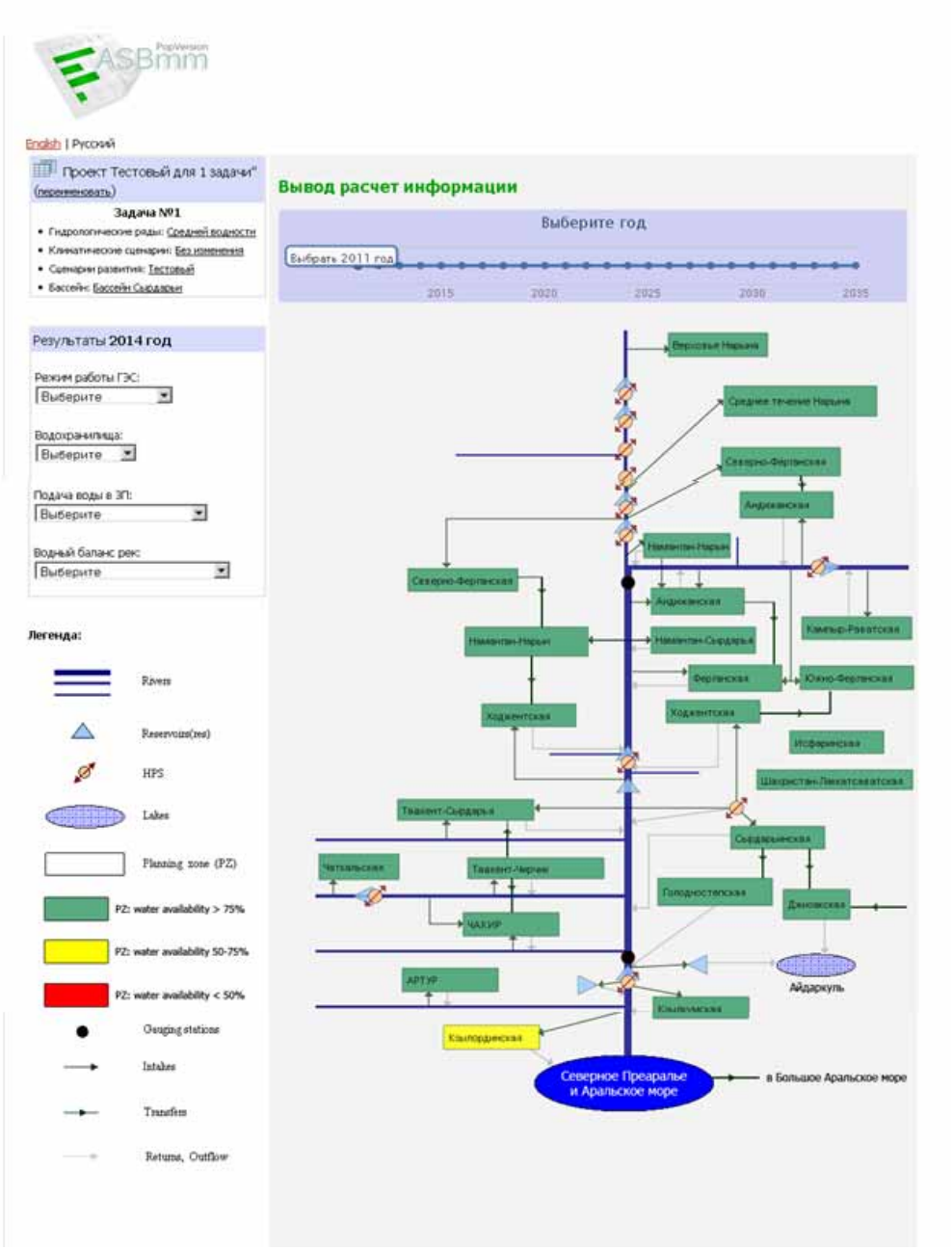


Fig. 1. ASB-mm model

Result 1.6. Developing and testing the model of river's section water balance (selection of rivers' section, and problem-solving with regard to flow distribution, channel inflow calculation, water losses in the river-bed).

State-of-the-art at the beginning of September 2010: There is no publicly available model of rivers' section water balance in the region

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model of rivers' section water balance for the Amudarya and Syrdarya riv-

ers is developed and tested (Fig. 2). The model is based on the balance non-dynamic schemes of water allocation on the sections of major rivers in the Amudarya and Syrdarya river basins, according to which the calculation is carried out sequentially downstream for ten-days period, taking into account all the main items of the river channel water balance (inflow from the upper section, lateral inflow to the section, water withdrawal, return flow to the section - a collector&drainage flow, releases from canals, water losses, releases into lakes, water delivery to downstream sections).

The model is a computer program connected to the CAREWIB DB; it allows solving the following tasks:

  - Calculation of river section's channel balance of the main rivers of the Amudarya and Syrdarya river basins;
  - Calculation of water balance of the main reservoirs of the Amudarya and Syrdarya river basins.

- Within this task the following tasks were implemented:
  - Analysis of reservoir performance in the Amudarya and Syrdarya river basins - comparison of predicted (planned) and actual values;
  - Analysis of water uses on the river sections - comparison of predicted (planned) and actual values;
  - Estimation of water allocation by means of criteria and indexes of effectiveness.
- The standard forms for calculation of the Amudarya and Syrdarya river channel balances, which are used for Analytical report preparation (see Result 3.6), have been prepared. These forms are included into the Analytical Reports on vegetation and non-vegetation periods.

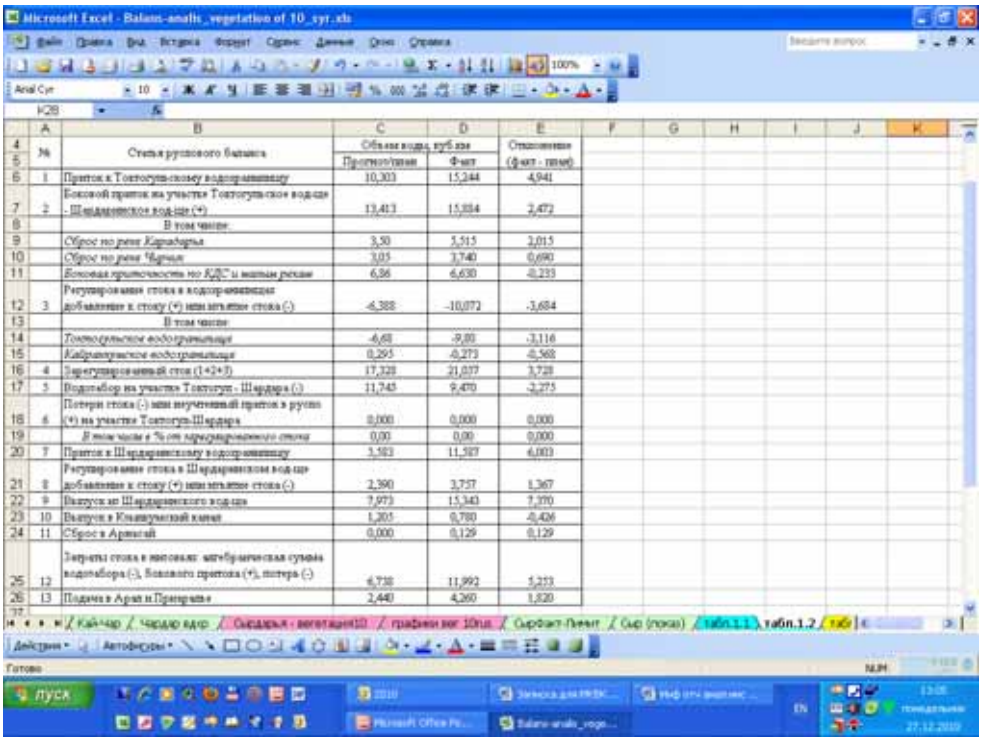


Fig. 2. The channel water balance model of the river sections

Indicators: Analytical water balance model for river sections of the Amudarya and Syrdarya rivers allows evaluating the development validity and water losses. The planned work was fulfilled to 100%.

Milestones: the work was done within the planned term

Result 1.7. Developing and testing the model for estimation and prediction of return flow.

State-of-the-art at the beginning of September 2010: There is no publicly available model for estimation and prediction of return flow in the region.

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model will be developed to March 2011.

Indicators: Analytical model for estimation and prediction of return flow

Milestones: The work will be fulfilled before March 2011.

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 September 2010: There is no publicly available model for estimation and prediction of river flow in the Syrdarya and Amudarya Basins

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model will be developed to May 2011.

Indicators: Analytical tool for estimation and prediction of river flow in the Syrdarya and Amudarya river basins

Milestones: The work will be fulfilled before May 2011.

Result 1.9. On-line prediction of return flow and lateral inflow

State-of-the-art at the beginning of September 2010: There is no publicly available model for prediction of return flow and lateral inflow.

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model will be developed to December 2011.

Indicators: Analytical model for prediction of return flow and lateral inflow into rivers of Syrdarya and Amudarya river basins.

Milestones: The work will be fulfilled up to December 2011.

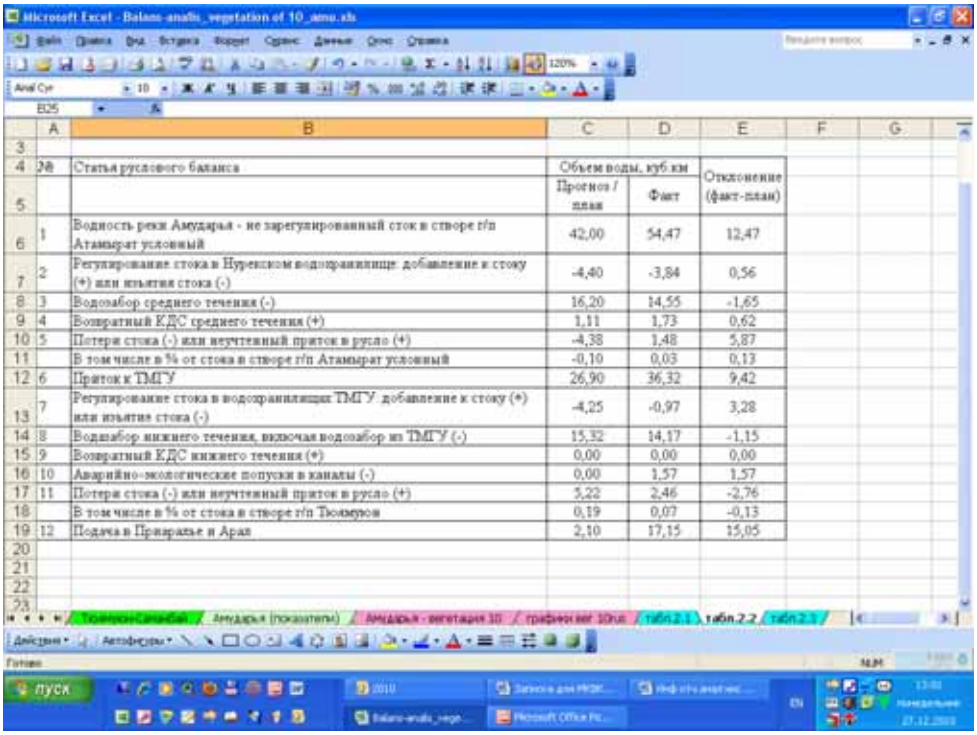
Result 1.10. Developing and testing the model for estimation of non-productive

losses in the river channels

State-of-the-art at the beginning of September 2010: There is no publicly available model for estimation of non-productive losses in the river channels

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model for estimation of non-productive losses in the river channels (Fig. 3) is developed and tested. This model can be used for 2 calculation algorithms of river channel losses for river sections in the Amudarya and Syrdarya river basins. The first algorithm is based on the water balance method (the losses are determined as remainder term of the water balance equation. The second algorithm for estimation of water losses is based on the equations obtained during the specific researches related to "regulating" non-productive water losses.
- The river channel losses of the Amudarya and Syrdarya rivers for the vegetation period 2010 were estimated by means of this model.



№	Статья руслового баланса	Объем воды, куб.км		Отклонение (факт-план)
		Прогноз / план	Факт	
1	Водность реки Амударья - не зарегулированный сток в створе г/п Атамурат условный	42,00	54,47	12,47
2	Регулирование стока в Нурекском водохранилище: добавление к стоку (+) или изъятие стока (-)	-4,40	-3,84	0,56
3	Водозабор среднего течения (-)	16,20	14,55	-1,65
4	Возвратный КДС среднего течения (+)	1,11	1,73	0,62
5	Потери стока (-) или неучтенный приток в русло (+)	-4,38	1,48	5,87
	В том числе в % от стока в створе г/п Атамурат условный	-0,10	0,03	0,13
6	Приток к ТМГУ	26,90	36,32	9,42
7	Регулирование стока в водохранилищах ТМГУ: добавление к стоку (+) или изъятие стока (-)	-4,25	-0,97	3,28
8	Водозабор нижнего течения, включая водозабор из ТМГУ (-)	15,32	14,17	-1,15
9	Возвратный КДС нижнего течения (+)	0,00	0,00	0,00
10	Аварийно-экологические попуски в каналы (-)	0,00	1,57	1,57
11	Потери стока (-) или неучтенный приток в русло (+)	5,22	2,46	-2,76
	В том числе в % от стока в створе г/п Тюямуюн	0,19	0,07	-0,13
12	Подача в Приаралье и Арал	2,10	17,15	15,05

Fig. 3. Model for estimation of non-productive losses in the river channels

Indicators: The analytical model allows estimating non-productive losses in the river channel. The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

Result 1.11. Developing and testing the model of a reservoir's waterworks facility with hydroelectric power station (object selecting and problem solving on streamflow regulation by reservoir, evaluation of HES's operating mode, including electricity production, calculation of deficits, releases etc.)

State-of-the-art at the beginning of September 2010: There is no publicly available model for evaluation of reservoir's waterworks facility with hydroelectric power station

Results of SIC, BWO “Amudarya”, BWO “Syrdarya”:

- The model for estimation of HES's performance on a large reservoir's waterworks facilities (inflow, releases, escapages on HES, electricity production) (Fig. 4 and5) is developed and tested. The calculation algorithm of HES's characteristics, including releases, idle spills, reservoir's storage volume dynamics, electricity production by HES, is used in this model. This model is used jointly with the model on reservoir's water balance and allows calculating the project operating modes, comparing them with actual operating modes, evaluating the effectiveness of HES's waterworks facility as a whole regarding the electricity non-productive losses.
- Using this model, the operating modes of the Naryn-Syrdarya HES's cascade are calculated and electricity production and consequences of management in land irrigation and ecosystems are estimated.

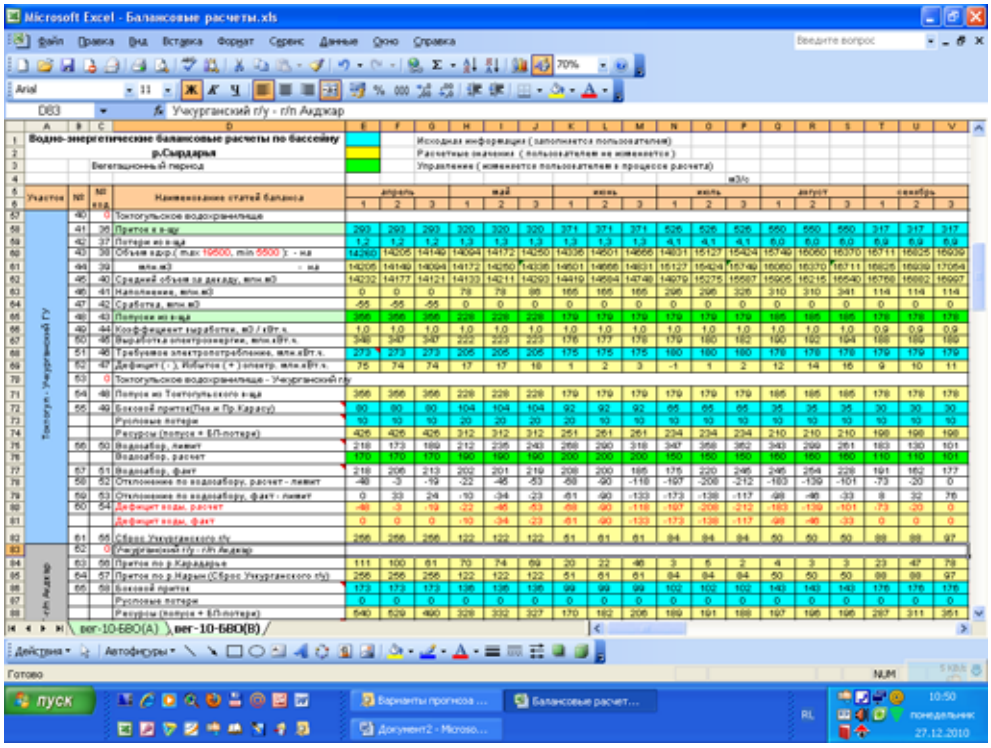


Fig. 4. Model for estimation of HES performance on large reservoir's waterworks facilities – calculation module

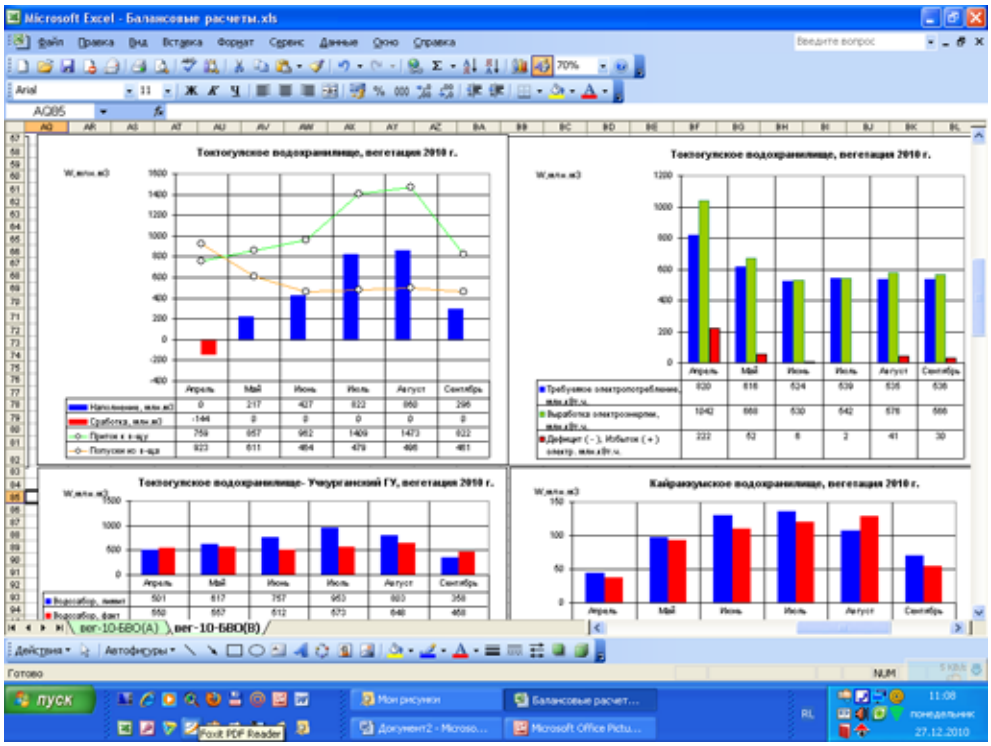


Fig. 5. Model for estimation of HES performance on large reservoir's waterworks facilities – data output

Indicators: Analytical model will allow estimating the HES's performance on large reservoir's waterworks facilities. The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

Result 1.12. Developing and testing a 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 September 2010: There is no publicly available model of hydrochemical composition of water for Amudarya river

SIC results:

- The model of hydrochemical composition of Amudarya river water will be developed in the beginning 2011. The work will be fulfilled up to July 2011.

Indicators:

Milestones:

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

The main result of this component is the broadening of geographical area covered by the portal, which is used as information exchange platform between EECCA water management organisations and recognized international water NGOs.

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 September 2010: CAREWIB is used as the information resource by five national water management organizations - founders of ICWC.

Results of SIC, ICSD, UNECE, Zoi:

- The CAREWIB resource potentials were presented at the meetings attended by representatives of IFAS, ICWC, ICSD, EurAsEC, various ministries and other organizations:
    - At the INBO's European conference dedicated to the issue of WFD implementation (Megev, France, 22-24 September)
    - At the regional seminar "Capacity building in the integrated planning and water resources management in Central Asia" (Tashkent, 26-30 October)
    - At the international scientific workshop "Water in Central Asia" (Tashkent, 24-26 November)
    - At the European Union consultation on Afghanistan (Brussels, 7 December)
    - At the workshop Strengthening integrated water resources management and transboundary water cooperation: the role of UNECE conventions and of the EU Water Initiative National Policy Dialogue (Ashgabad, 6-7 December)
    - At the EC-IFAS Donor conference on the Aral Sea Basin Programme 3 (Almaty, 9 December)
    - At the ICSD meeing (Tashkent, 14 December)

Indicators: Five national water management organizations, the Ministry of Foreign Affairs of the Republic of Uzbekistan, and Embassies of the Republic of Uzbekistan in various countries, etc. use CAREWIB as an official information resource (Annex 7).

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: Data on water resources of Af-

ghanistan for 1960-1970 is available on the portal.

Results of SIC, Zoi:

- Participation in the European Union's consultations regarding Afghanistan (see also Results 3.2)

Indicators: The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

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 September 2010: Cooperation on regular information exchange with 59 organizations is organized within EECCA water management organizations network.

Results of SIC, ICSD, UNECE:

- EECCA water management, research and design organisations participate in regular information exchange.

Indicators: 59 water management, research and design organisations of EECCA participate in regular information exchange. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: Cooperation with WWC, ICID, INBO, GWP CAR and others is organized on a regular basis.

SIC results:

- Cooperation with World Water Council, International Commission on Irrigation and Drainage, International Network of Basin Organizations, Global Water Partnership of Central Asia and Caucasus, International Office for Water is continued:
    - The web-sites of these organizations are updated on the portal; their publications are translated into Russian and placed on the portal.

Indicators: The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

Result 2.5. Cooperation with other data owners

State-of-the-art at the beginning of September 2010: For past years there were one-time communications with other data holders

SIC results:

- The CAWA project's reports and publications are placed on the portal.

Indicators: The CAWA project's reports and publications

Milestones: the work was done according to the planned term

Result 2.6. Conducting a stakeholder workshop for planning the project and defining its role within the ASBP 3

State-of-the-art at the beginning of September 2010: SIC has the project proposal on further improvement of the project and its inclusion into the ASBP-3

SIC results:

- The stakeholder workshop will be held in April 2011.

Indicators: the workshop minutes

Milestones: April 2011

Result 2.7. Finalizing a Project Document for the next phase

State-of-the-art at the beginning of September 2010: Project Document for the next phase is not finalized

Results of SIC, ICSD, UNECE, Zoi:

- Preparation and coordination of the Project Document for the next phase will be started in 2011.

Indicators: the Project Document

Milestones: Second half-year 2011

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

The main result of the activities under this component is the increased information volume on regions outside the Aral Sea Basin in the Information System. In the future the CAREWIB IS will cover the whole Central Asia.

Result 3.1. Developing the IS patterns for Central Asian areas outside the ASB

State-of-the-art at the beginning of September 2010: 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 to the present time

SIC results:

- The IS is being filled with information on the regions situated outside the Aral Sea basin.
- Some GIS-layers on 3 areas of Kyrgyzstan (Issyk-Kul, Chu and Talas provinces) are prepared.
- The prototype units of appropriate parameters for new areas are prepared.

5 NFP results:

- Data on new areas was added into the regional IS.

Indicators: The DB's information volume is increased by means of additional new areas. The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term.

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

State-of-the-art at the beginning of September 2010: The portal has a section, which is dedicated to Afghanistan with DB on rivers for 1960-1970

SIC results:

- The Database on Afghanistan is updated by the following:
    - 38 new records - hydrological information on rivers (96 new records will be added during 2011)
- A Knowledge Base on Afghanistan containing reports, articles, monographs, declarations of international conferences, international agreements, is available on the portal (Fig. 6).
- 11 topographic maps created by the UN cartographic service in Afghanistan (AIMS, www.aims.org.af) are placed on the portal.

Indicators: A Knowledge Base on Afghanistan is created; new data are introduced into DB. The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

Fig. 6. Database and Knowledge Base on 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 September 2010: 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 to the present time

SIC results:

- Data for 2010 are introduced.
- The part of parameters in the IS is thoroughly available (Annex 2).

5 NFP results:

- Data on each state for 2010 are introduced into the regional IS.

Indicators: The DB's information volume is increased by means of new data of 2010. The planned work was fulfilled up to 100%.

Milestones: the work was done according to the planned term

Result 3.4. Developing new GIS-layers

State-of-the-art at the beginning of September 2010: GIS-layers for provinces of Central Asia states within ASB are created.

SIC results:

- GIS-layers for the Naryn area of Kyrgyzstan, Southern-Kazakhstan and Kyzylorda areas of Kazakhstan are prepared.
- SHP-files of GIS-layers are available for downloading from the IS by registered users.

5 NFP results:

- Cartographical information on the regions of the states are gathered and delivered to the SIC in order to integrate it into the GIS of national information systems.

Indicators: Increased number of GIS-layers. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: The present GIS-interface has no function for visualization of database's regional statistics

Results of SIC, Zoi:

- Creating on-line maps based on available GIS through INTERNET will be started in January 2011 with financial support of the GTZ project "Transboundary water management in Central Asia".

Indicators: Including GIS into DB. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: Analytical reports for vegetation and non-vegetation periods are available on the website since 2008

SIC results:

- The following reports are placed on the portal:
    - Analysis of the water management situation in the Amudarya and Syrdarya river basins for vegetation of 2010
    - Analysis of the water management situation in the Amudarya and Syrdarya river basins for non-vegetation of 2009-2010.
    - Dynamics of general indicators of the Aral Sea Basin states (updated)

- Monitoring of the Amudarya river delta and the exposed bed of the Aral Sea (June 2009 - September 2010) - delivered by the SIC owing to participation in the CAWa project.

Results of BWO “Syrdarya”, BWO “Amudarya”:
Information on actual water balance of the river sections and reservoirs as well as lateral inflow, actual allocation of transboundary flow, waterwithdrawals and main canals compared with the limits; prediction of operation modes of the reservoirs in the ASB is delivered to the SIC.

5 NFP results:
- Analytical reports from the portal were regularly downloaded and delivered to authorities.

Indicators: 8 analytical reports are available on the portal. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

Result 3.7. Regular provision to water management organizations of 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 September 2010: Analytical reports available on the portal have no information from RHC/NHMS

SIC results:
- The analytical reports were produced and disseminated on the basis of BWOs information (without information from RHC/NHMS(see Result 1.1)

Indicators:

Milestones:

Result 3.8. Monitoring of the establishment of national information systems and consultations with NIS developers.

State-of-the-art at the beginning of September 2010: 24 trainings and 4 regional seminars were conducted in 2007-2010

SIC results:
- Anational seminar in Turkmenistan was held (15-22 December)
- National seminars for NIS developers of other countries were not conducted as planned during September-December 2010 after discussion with the PSC.
- A regional seminar and the PSC meeting were held (26 November).
- The following manuals are updated:
  - Manual on using CAWater-Info portal in day-to-day activity (11th edition, revised).
  - Manual on using the knowledge bases of CAWater-Info Portal in day-

to-day activity (7th edition, revised).
    - Manual on using the CAREWIB Database online (6th edition, revised).
    - Manual on using the website of the Network of Eastern Europe, Caucasus and Central Asia Water Management Organizations (2d edition, revised).
    - Manual on searching information on the CAWater-Info portal (2d edition, revised).
- Equipment delivered to NFPs was serviced.

5 NFP results:

- Continuous communication with water management, environmental and other organizations of Central Asian countries is established; information for national information systems is regularly provided.
- Information was introduce into national and regional information systems.

Indicators: 1 regional seminar and 1 national seminar were conducted.

Milestones: the work was done according to the planned term

Result 3.9. Training on using the national information systems in day-to-day activity for water specialists, NGO's representatives and other stakeholders

State-of-the-art at the beginning of September 2010: Representatives of NGOs and other stakeholders participated in seminars organized within the project in 2007-2010.

SIC results:

- The training seminars for NGOs' representatives and other stakeholders were not conducted during September-December 2010.

Indicators: Appropriate number of users is trained and consulted

Milestones: Trainings jointly with monitoring; consultations as needed

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

The main result on this component is the increased volume of available information, the increased multimedia capabilities, the extended thematic content, easier access to this information for the portal visitors.

Result 4.1. Regular collection, processing and dissemination of information on water and environment in CAR.

State-of-the-art in the beginning of September 2010: CAWater-Info Portal has 23 websites including 16,000 sites and about 2,000 pdf-documents. Partners have a huge information volume on the use of ASB water and land resources, which is to be processed and made available through INTERNET

SIC results:

- Information on issues related to the Aral Sea Basin in the INTERNET is tracked and gathered.
- The E-library is updated with publications, documents etc. of SIC and partners (see Result 5.1).

5 NFPs results:

- Relevant information about events on water management in Central Asian countries is provided.

ICSD results:

- Publications and agreements have been shared.

Indicators: CAWater-Info Portal has 42 websites including 25,000 pages, about 2,600 pdf-documents.

Milestones: The portal is being updated every day; the work was done according to the planned term

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

State-of-the-art in the beginning of September 2010: The Bibliographic Database has 4117 records in Russian and 2761 records in English

SIC results:

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

Indicators: The Bibliographic Database has 4374 records in Russian and 2960 records in English

Milestones: the work was done within the planned term

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 September 2010: DB "Water Atlas" has 569 records in Russian and in English. Electronic Directory "Who is who in water management" has 382 records in Russian and in English.

SIC results:

- New records are added.

5 NFPs results:

- Information about personnel of national water management organizations for DB is gathered and delivered to SIC.

Indicators: DB "Water Atlas" has 634 records in Russian and English. Electronic Directory "Who is who in water management" has 440 records in Russian and English.

Milestones: the work was done within the planned term

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 September 2010: The Knowledge Base "Land and water resources use in the Aral Sea Basin" has the summaries on 398 pilot projects implemented in the region. The Knowledge Base "International and National Water Law" includes 610 documents.

SIC results:

- The Knowledge Base "Land and water resources use in the Aral Sea Basin" is updated with information about 19 projects implemented in the region in 1960-1980.
- The Knowledge Base "Land and water resources use in the Aral Sea Basin" is updated with information about rivers, lakes, reservoirs etc.
- The Knowledge Base "International and National Water Law" is updated with 40 new documents.

ICSD results:

- The relevant information for the Knowledge Bases was given.

Indicators: The Knowledge Base "Land and water resources use in the Aral Sea Basin" has the summaries on 417 pilot projects implemented earlier in the region. The Knowledge Base "International and National Water Law" has 650 documents.

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: The Knowledge Base “Integrated Water Resources Management: Central Asian practice” includes 558 documents

SIC results:

- The Knowledge Base is updated with documents of the "IWRM-Fergana" project.
- The Knowledge Base of the project "Water Productivity Improvement at Plot Level is updated with new documents.

5 NFPs results:

- The relevant information for the Knowledge Base was given.

Indicators: The Knowledge Base “Integrated Water Resources Management: Central Asian practice” includes 581 documents.

Milestones: the work was done within the planned term

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

State-of-the-art at the beginning of September 2010: Material in national languages of CA countries as well information of national water management organizations are placed on the CAWater-Info portal.

SIC results:

- Assistance on placing information on the portal was given to the national teams.

5 NFPs results:

- Material translated into Central Asian national languages are made available.

Indicators: The section on national languages has 1244 documents.

Milestones: the work was done within the planned term

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

State-of-the-art at the beginning of September 2010: Information in Russian is still prevailing in some sections of the portal (percentage of material in English: 100% - all DBs and KBs; 60-100% - in other sections)

SIC results:

- The translation of the portal´s material into English is being implemented continuously.

Indicators: Increased information volume of high-qualitaty translation into English on the bilingual site.

Milestones: the work was done within the planned term

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

The main result of this component is published and disseminated publications in hard copies and e-format. In order to save the cultural, scientific and historical heritage the publications issued at the end of 19 - the first half of 20 centuries are digitized. This material form a unique content of the portal.

Result 5.1. Publication and dissemination of non-periodic issues

State-of-the-art at the beginning of September 2010: 336 publications of SIC and partners are placed on the portal during Phase 2.

Results of SIC, EC IFAS, ICSD, UNECE:

- Various brochures, proceedings/collected papers, reports are prepared, published and disseminated (Annex 6)
- E-publications of partners are placed on the portal
- Bulletins, brochures and other information is disseminated

Indicators: 85 new publications of SIC ICWC and partners (additionally to historical ones) were placed on the portal. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

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

State-of-the-art at the beginning of September 2010: There are 2 analytical reports on visiting statistics of sites – for 2008 and an aggregated for 2006-2009.

SIC results:

- Visiting statistics of all portal sections was being monitored monthly (Annex 3).

Indicators: The number of portal's visitors increased up to 2700-3000 persons/day in November-December 2010. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

Result 5.3. Publishing and disseminating periodical issues

State-of-the-art at the beginning of September 2010: “CAWater-Info News” bulletins, ICWC press-releases (in Russian and in English), INBO bulletins are published and disseminated on a regular basis.

Results of SIC, ICSD:

- From November 2010 the bulletins "CAWater-Info News" and the ICWC press-releases were issued only in e-version and were disseminated through the portal and mailing list.
- 50 bulletins "CAWater-Info News" and 4 ICWC press-releases were sent by e-mail.
- The database of e-mail addresses included:
  - Bulletin "CAWater-Info News": 318 Russian-speaking subscribers and 166 English-speaking subscribers;
  - ICWC press-releases: 328 Russian-speaking subscribers and 88 English-speaking subscribers;
  - INBO bulletin - 371 subscribers.

Indicators: 50 bulletins "CAWater-Info News" and 4 ICWC press-releases were distributed by e-mail. The planned work was fulfilled to 100%.

Milestones: the work was done according to the planned term

Result 5.4. Preparing and disseminating CDs with digital training material

State-of-the-art at the beginning of September 2010: 5 CDs have been issued.

SIC results:

- The earlier prepared CDs are updated:
  - CD with learning materials of CAREWIB project (textbooks, manuals)
  - CD with the Knowledge Base "Land and water resources use in the Aral Sea Basin"
  - CD with the Knowledge Base "Integrated Water Resources Management: Central Asia experience"
  - CD with the Knowledge Base "International and national water law"

Indicators: 4 updated versions of CDs.

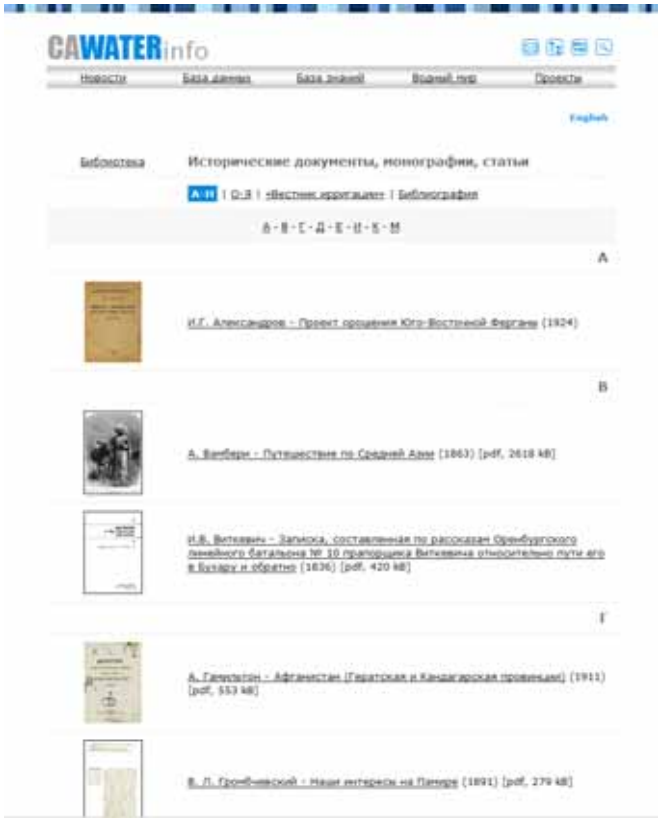
Milestones: the work was done according to the planned term

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 September 2010: SIC and partners have rarities and ancient books, maps in their archival depositories

Results of SIC, ICSD:

- Rare and ancient books available in the archives are digitized - 45 in Russian and 5 in English (Annex 4).
- 10 ancient maps are added to the library.



Indicators: 50 digitized archival materials

Milestones: the work was done according to the planned term

Result 5.6. Advertising the portal and IS through placing modern information about water resources of Central Asia and updating available one in the global information systems (e.g. WaterWiki)

State-of-the-art at the beginning of September 2010: Information about CAREWIB project and other related projects which are implemented in the region is available in the global information systems (WaterWiki etc.)

SIC results:

- Bookmarks of the most popular social networks (Facebook, Twitter etc.) are placed on the portal

Indicators: The portal's information can be disseminated through the social networks.

Milestones: the work was done according to the planned term

Result 5.7. Preparing and publication of materials on environmental indicators

State-of-the-art at the beginning of September 2010: ICSD has material on environ-

mental indicators

ICSD results:

- The environmental indexes of Central Asian countries for 1990-2004 are handed over for publication.

Indicators: Increased number of users owing to new content.

Milestones: the work was done according to the planned term

3. Milestones and outputs of the project

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

Item	Place	Date
INBO European Conference dedicated to the problem of implementation of the European Water Framework Directive	Megeve, France	22-24 September
Regional seminar "Capacity building on integrated planning and water resources management in Central Asia"	Tashkent	26-30 October
International scientific symposium "Water in Central Asia"	Tashkent	24-26 November
The Project Steering Committee meeting	Tashkent	26 November
The European Union's consultation on Afghanistan	Brussels, Belgium	7 December
At the workshop Strengthening integrated water resources manage-ment and transboundary water cooperation: the role of UNECE conven-tions and of the EU Water Initiative National Policy Dialogue	Ashgabad	6-7December
At the EC-IFAS Donor conference on the Aral Sea Basin Programme 3	Almaty	9 December
ICSD meeting	Tashkent	14 December
The SIC ICWC project staff meeting on organizational issues (under the leadership of Prof. V.A.Dukhovny)	Tashkent	Monthly

4. Constraints and lessons learned

The main constraints to be taken into consideration in further activities are:

- There is an ambiguous interest among countries of the region regarding integration of regional activities with Afghanistan ; Afghanistan itself is cautious with regard to cooperation on water problems and information exchange with northern neighbors;
- The cooperation with EC-IFAS did not develop during the reporting period, which is one reason why the NMHSs have not been involved involved in the information exchange.

5. Outlooks for 2011

Further information exchange in water-environment area in the region will 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.

6. Annexes

Annex 1. List of Abbreviations

Annex 2. On-line access to the CAREWIB IS data

Annex 3. Statistics of the portal visits

Annex 4. List of old books available through the portal.

Annex 5. List of workshops conducted under project

Annex 6. List of publications

Annex 7. List of web sites, which include links to CAWater-Info

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

Annex 2. On-line access to the CAREWIB IS data

FULL - from 1980 to present time **REGISTRATION** - 1980-1985

DB on sectors

Parameter	Access
• Agrarian	
o Allocation of land areas, thousand hectares	full
o Land area, thousand hectares	restricted
o Saline land area, thousand hectares	restricted
o Allocation of land areas under crops, thousand hectares	restricted
o Croppage, thousand tons	restricted
o Crop yield, tons/ha	full
o Allocation of collectors and drains, m/ha	restricted
o Water discharge of the collector & drainage network, m3/sec	restricted
o Salinity of drainage discharge, g/l	restricted
o Unit drainage discharge, l/sec/ha	full
o New drainage length, km	restricted
o Improved drainage length, km	restricted
o Technical characteristics, km, number	restricted
• Economic	
o Demographic measures	
▪ Population size, thousand persons	full
▪ Birth rate, mortality, migration, per mille	full
o Employment of population, thousand persons	full
o Living standard	
▪ Money incomes / expenses of population, million $	restricted
▪ Average monthly wages, pension, $	restricted
o Housing conditions and transport	
▪ Housing resources, m2	restricted
▪ Transportation, thousand persons, thousand tons	restricted
o Education and Culture	
▪ Education, thousand persons, units	full
▪ Museums, libraries, units	full
o Health, thousand persons, units	restricted
o Production pattern of consumer goods, %	full
o Agriculture	
▪ Gross production of agriculture, including crop production, livestock, $ billion	full
▪ The number of cattle, cows, sheep and goats, thousand units	full
▪ Production of meat, milk, eggs, thousand tons, million units	full
o Water Sector, million $, thousand persons	restricted
o Gross Domestic Product and its structure	
▪ GDP, million $	full
▪ Industry, construction, agriculture and forestry, transport and communications,%	full
• Water management	
o Water withdrawal from the sources	
▪ Total water withdrawal, mln. m3	restricted
▪ - Municipal	
▪ actual, mln.m3	restricted

Parameter	Access
▪ - Industrial	
▪ actual, mln.m3	restricted
▪ incl. to TPSs	
▪ actual, mln. m3	restricted
▪ - Agricultural	
▪ actual, mln. m3	restricted
▪ incl. for irrigation	
▪ actual, mln. m3	restricted
▪ other, mln. m3	restricted
o Water diversion	
▪ Total release of drainage waters, mln.m3	
▪ - Municipal	
▪ actual, mln. m3	restricted
▪ Purification (%) when available sewage treatment facilities	restricted
▪ - Industrial	
▪ actual, mln. m3	restricted
▪ Purification (%) when available sewage treatment facilities	restricted
▪ including from THSs	
▪ actual, mln. m3	restricted
▪ Purification (%) when available sewage treatment facilities	restricted
▪ - Agricultural	
▪ actual, mln. m3	restricted
▪ Purification (%) when available sewage treatment facilities	restricted
▪ including out of irrigation	
▪ actual, mln. m3	restricted
▪ Other, mln.m3	restricted
• Municipal water supply	
o Water distribution system	
▪ Municipal water and wastewater treatment plants	
▪ planned water supply, mln.m3	restricted
▪ actual water supply, mln.m3	restricted
▪ efficiency, %	restricted
▪ Regional water and wastewater treatment plants	
▪ planned water supply, mln.m3	restricted
▪ actual water supply, mln.m3	restricted
▪ efficiency, %	restricted
▪ Other water and wastewater treatment plants	
▪ planned water supply, mln.m3	restricted
▪ actual water supply, mln.m3	restricted
▪ efficiency, %	
o Water supply sources	
▪ Surface waters	
▪ planned water supply from rivers, mln.m3	restricted
▪ actual water supply from rivers, mln.m3	restricted
▪ planned water supply from canals, mln.m3	restricted
▪ actual water supply from canals, mln.m3	restricted
▪ planned water supply from reservoirs, mln.m3	restricted
▪ actual water supply from reservoirs, mln.m3	restricted
▪ Groundwaters	
▪ planned water supply, mln.m3	restricted

Parameter	Access
▪ actual water supply, mln.m3	restricted

DB on objects

Parameter	Access
• Reservoirs	
• Canals	restricted
• Climatic stations	restricted
• Collectors	restricted
• Rivers	full
• Head intakes	full
• Gauging stations	restricted
• TPS	restricted
• HPS	restricted

Annex 3. Statistics of the portal visits

cawater-info.net

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
September 2010	20867	28238	127719	471894	15.47 GB
October 2010	28293	43468	122845	614265	18.20 GB
November 2010	29526	58500	656342	1151124	29.32 GB
December 2010	27770	59887	459062	943695	34.82 GB
Total	106456	190093	1365968	3180978	97.81 GB

icwc-aral.uz

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
September 2010	2676	3795	10799	38279	569.80 MB
October 2010	3247	5786	12592	43649	1.72 GB
November 2010	3444	7407	16620	49563	908.89 MB
December 2010	2863	7013	13543	38697	521.51 MB
Total	12230	24001	53554	170188	3.72 GB

Annex 4. List of old books available through the portal

In Russian

1. I.G.Aleksandrov “Irrigation project in South-East Fergana” (1924)
2. A Vambery “Travel to Central Asia” (1863)
3. I.V.Vitkevitch "Essay compiled by the stories of Mr. Witkiewicz, officer of the Orenburg line battalion n 10, regarding his way to Bukhara and back" (1836)
4. A. Hamilton “Afghanistan (Great and Kandagar provinces)” (1911)
5. V.L. Grombchevsky “Our interests on the Pamir” (1891)
6. L.K.Davydov “Water content fluctuations in the Central Asia rivers” (1929)
7. M.M.Davydov “About near future of agricultural development of the Syrdarya region of Kazakhstan” (1926)
8. M.M.Davydov “Enisey-Ob-Aral-Kaspiy water management-energy problem” (1949)
9. Z.V. Djordjio “How to predict the water content in the rivers of Central Asia” (1949)
10. K.S. Eremeeva “Objects of water amelioration and land reclamation” (1928)
11. K.S. Eremeeva “Experience of labour hours tracking in the cotton farm” (1926)
12. A.M. Estifeev “Irrigation development prospects in the lower reaches of the Syr Darya river” (1926)
13. Irrigation of Uzbekistan, in 4 volumes (Vol. 1)
14. A.N.Kostyakov “Water use diagrams” (1918)
15. S.K.Kondrashov “Influence of water availability on irrigation rates and efficiency” (reprint, magazine “Turkestan Agriculture”)
16. S.K.Kondrashov “A few words to the use of irrigation source” (reprint, magazine “Turkestan Agriculture”)
17. S.K.Kondrashov “Water in the irrigated farm” (1922)
18. A.F.Makarov “The results of the work of Ak-Kavakskaya experimental irrigation stations” (1931)

19. E.A.Malyugin “For agricultural development of desert” (1935)

20. G.K. Rizenkampf “Experience of development of the water circulation theory for irrigation systems” (1921)

21. D.P.Ruzsky “Theory of jet devices” (1903)

22. V.V.Rusinov “Water-land relations and turkmen community” (1918)

23. P.V.Starov “Issues regarding organization of irrigated territory” (1932)

24. M.A.Stekolnikov “Water Resources of Central Asia and Kazakhstan” (1934)

25. A.E.Snesarev “Afghanistan” (1921)

26. A.P.Fedchenko “From the Kokan. Travel information on Kokansky Khanate in 1871 by A.P.Fedchenko (1871)”

27. N. Shavrov “Water management in Turkestan and Zakaspiyskaya area due to the draft of water law” (1911)

28. O.A.Shkapsky “Regarding land irrigation in Turkestan” (1909)

29. V.L. Shults “Rivers of Afghanistan” (1968)

30. V.I. Yuferev “Agricultural review of Turkestan” (1911)

31. “Herald of irrigation”, n 3-4 (June-July 1923)

32. “Herald of irrigation”, n 9 (September 1924)

33. “Herald of irrigation”, n 1 (January 1924)

34. “Herald of irrigation”, n 2 (Februry 1924)

35. “Herald of irrigation”, n 7 (July 1924)

36. “Herald of irrigation”, n 8 (August 1924)

37. “Herald of irrigation”, n 10 (October 1924)

38. “Herald of irrigation”, n 1 (January 1925)

39. “Herald of irrigation”, n 9 (September 1925)

40. “Herald of irrigation”, n 10 (October 1925)

41. “Herald of irrigation”, n 11 (November 1925)

42. “Herald of irrigation”, n 8 (August 1926)

43. “Herald of irrigation”, n 10 (October 1928)

In English

1. J. Abbott: Narrative of a journey from Heraut to Khiva, Moscow, and St. Petersburgh, during the late Russian invasion of Khiva, with some account of the court of Khiva and the kingdom of Khaurism, vol.1 (1884)

2. J. Abbott: Narrative of a journey from Heraut to Khiva, Moscow, and St. Petersburgh, during the late Russian invasion of Khiva, with some account of the court of Khiva and the kingdom of Khaurism, vol.2 (1884)

3. E. Bell: The Oxus and the Indus (1874)

4. O. Olufsen: Through the unknown Pamirs; the second Danish Pamir expedition, 1898-1899 (1904)

5. Vambery: The coming struggle for India: being an account of the encroachments of Russia in Central Asia, and of the difficulties sure to arise there from to England (1885)

Annex 5. List of workshops conducted under project

Name of Event	Date	No of days	Place, country	Responsible	Institution	Purpose	Target Audience	Number of Par-tici-pants (M/F)
Regional seminar on the project attended all NFPs and PSC's meeting	26 November	1	Tashkent, Uzbekistan	Beglov I.	SIC ICWC	Discussion of the report for phase 2 and the work plan for 2010	All project executors	22 (18/4)
National seminar in Turkmenistan	15-22 December	7	Ashgabad, Turkmenistan	Sorokin D.	SIC ICWC	Discussion of current situa-tion	NFP of Turkmenistan	7 (7/0)

Annex 6. 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.	Water policy: security and water reforms (	September	IWRM-Fergana project
2.	SIC ICWC's Information Collection “Flood control: review of world experience”	September	SIC ICWC
3.	Model environmental law of CIS member-states, part 1	CAREWIB project	CAREWIB project
4.	Model environmental law of CIS member-states, part 2 (	September	CAREWIB project
5.	Model environmental law of CIS member-states, part 3	September	CAREWIB project
6.	Intergovernmental agreements on environmental conservation, signed by Eastern Europe, Caucasus and Central Asia states (SIC ICWC's Legal Collection, vol. 23)	September	SIC ICWC
7.	International Environmental Law (SIC ICWC's Legal Collection, vol. 24)	October	SIC ICWC
8.	Recommendations for selection of type, location and construction of water meters in WUA	October	IWRM-Fergana project
9.	SANIIRI on the way to IWRM (collection of scientific papers)	October	IWRM-Fergana project
10.	Irrigation as the main element of effective regulation of the plant life's factors	October	WPI-PL project
11.	Preparing an irrigated plot for vegetative irrigation and organizing the water saving on-farm irrigation system	October	WPI-PL project
12.	Applying the improved elements of technique and technology of furrow and flooding irrigation on the regulated land strips	October	WPI-PL project
13.	Applying the improved agrotechnical measures to increase a soil fertility and water productivity by means of mulching between rows	October	WPI-PL project
14.	Irrigation with fertilizer by means of injection of liquid fertilizer into irrigation water (fertigation)	October	WPI-PL project
15.	How to determine the date of the next watering, and to calculate the irrigation rate for vegetation period in the field conditions	October	WPI-PL project
16.	Applying simple water measuring structures for water control and technical tools for the rated water distribution aiming to rational water use for irrigation	October	WPI-PL project

n	Name	Date	Publisher
17.	Irrigation regime during vegetation period for crops in the Osh area	October	WPI-PL project
18.	Applying subsurface irrigation on the basis of the horizontal drainage & irrigation system (subirrigation)	October	WPI-PL project
19.	Drip irrigation system for orchad and vineyard	October	WPI-PL project
20.	Regulations for measuring water discharge using standard weirs (triangular, trapezoidal, rectangular and in the flumed aqueducts), and recommendations on installation of water distribution nodes on the freight pipelines for dekhkan farms	October	WPI-PL project
21.	Recommendations on equipping the pilot fields with water intake and water control facilities for the dekhkan farm "Navbakhor" in Zafarabad province and for the dekhkan farm "Amakchon" in Matchinsky province	October	WPI-PL project
22.	Irrigation regimes of main crops for provinces of the Sogdiyskaya geographic-economic area	October	WPI-PL project
23.	Improvement of irrigation techniques and recommendations	October	WPI-PL project
24.	General subjects of cultivated crops irrigation	October	WPI-PL project
25.	Cotton worm	October	WPI-PL project
26.	Red srider	October	WPI-PL project
27.	Training Module "Methods of combating pests and diseases of plants"	October	WPI-PL project
28.	Хашаротхои зараррасони пахта (in Tajik)	October	WPI-PL project
29.	Накшаи обёрии пахта (in Tajik)	October	WPI-PL project
30.	Кишти тирамохии зироатхои галладонагй (in Tajik)	October	WPI-PL project
31.	Кишти босифат кафолати хосили баланд (in Tajik)	October	WPI-PL project
32.	High-quality sowing - a base of high yields	October	WPI-PL project
33.	Recommendations on optimal combination of furrow irrigation technique elements for different conditions of the Fergana Valley	October	WPI-PL project
34.	Recommendations on water application and irrigation rates for winter wheat in the Ferghana Valley	October	WPI-PL project
35.	Planning irrigation of cotton when covering soil by the polyethylene film	October	WPI-PL project
36.	Irrigation of cotton under the film and the groundwater depth of 2-3 m	October	WPI-PL project
37.	Irrigation of cotton under mulching the sierozem soils with plastic film and the groundwater depth of 1-2 m (close to surface) in the Fergana Valley	October	WPI-PL project
38.	Полиэтелен плёнка остига экилган гузани сугориш режими (in Uzbek)	October	WPI-PL project

n	Name	Date	Publisher
39.	Гузанинг сувга талаби ва сугориш режими (in Uzbek)	October	WPI-PL project
40.	Гузани сугориш буйича тавсиялар (in Uzbek)	October	WPI-PL project
41.	Effective use of water resources in Agriculture and urgent problems of improving the land reclamation conditions (Proceedings of the Republican Scientific-Practical Conference, Tashkent, 10-11 November, 2010)	November	SANIIRI
42.	A New Water Politics: World Water Council 2010-2012 Strategy	November	SIC ICWC
43.	Yu. Kh. Rysbekov “Agreement between USA and Canada of 1909 on boundary waters and establishment of International joint commission: progress, lessons and cooperation example (analytical review)”	November	IWRM-Fergana project
44.	V.A. Dukhovny. Water Resources Management in Central Asia — Achieving the Consensus between Water and Energy Sectors	November	IWRM-Fergana project
45.	Volume of abstracts of the International Scientific Symposium “Water in Central Asia” (24-26 November 2010, Tashkent)	November	CAWa project
46.	Model law on dam safety of CIS member-states	December	CAREWIB project
47.	P. Gleick. Water Conflict Chronology since 3000 BC till 2009 (translated and published in Russian by CAREWIB)	December	CAREWIB project
48.	J. Xia: Proposal on WWC Strategies Plan and 6th World Water Forum Action on Water Supply Management and Water Demand Management	December	SIC ICWC

Annex 7. List of web sites, which include links to CAWater-Info

History of the Aral Sea: from Antiquity to Present
kungrad.com

Center for Russian Waterworks Inventory and State Water Cadastre
www.waterinfo.ru

Russian Research Institute for Integrated Water Use and Protection (FGUP RosNIIVH)
www.wrm.ru

Embassy of Uzbekistan to Germany
www.uzbekistan.de

Embassy of Uzbekistan to Russia
www.uzembassy.ru

International Forum "A drop of water is 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

All-Russia Research Institute of Hydraulic Engineering and Land Reclamation (VNIIG&M)
www.vniigim.ru

EurAsEC
www.evrazes.com

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

IWMI-Central Asia
centralasia.iwmi.org

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

Links catalogue
www.vodosbor.ru

Rivertwin Project
www.rivertwin.de

Embassy of Uzbekistan to Kyrgyz Republic
www.uzbekistan.kg

Commission of the Republic of Kazakhstan and the Kyrgyz Republic on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas
www.chutalascommission.org

Embassy of Uzbekistan to Republic of Kazakhstan
www.uzembassy.kz

Embassy of Uzbekistan to 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 » Environmental Resources of UzNet
infocom.uz

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

The Swedish Aral Sea Society
www.aralsjon.nu

Embassy of Uzbekistan to Republic of Azerbajan
www.uzembassy.az

Embassy of Uzbekistan to Republic of Ukraine
www.uzbekistan.org.ua

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

Legislation (Lexadin)
www.lexadin.nl

Embassy of Uzbekistan to 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 Environmental Protection of Kyrgyz Republic
www.nature.kg

Seversk-Donets Basin Department of Water Resources
sdbuvr.slav.dn.ua

CentralAsiaConsulting
www.centerasiaconsulting.ru

EcoCentre.tj - Youth Environmental Center
www.ecocentre.tj

Aarhus Center in 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