Russia - Kazakhstan : Transboundary management of the Irtysh river 2001 - 2003

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The Irtysh basin stretches from the Altaï Mountains in the People’s Republic of China to Russia where the river flows into the Ob, after crossing eastern Kazakhstan. It covers a large part of Kazakhstan’s industrial areas (mining and metallurgic complexes) and because of this the river is polluted. However, it is still used for industrial fishing and for supplying drinking water to the towns in the Pavlodar region.

With its main towns (Omsk, Palodar, Semipalatinsk and Ust Kamenogorsk), its mineral areas and its important nuclear testing area the Irtysh river basin, is particularly submitted to high water pollution.

Mr. Mikheiev, Prime Vice Minister of Natural Resources of the Russian Federation, and Mr. Murat Musataev, Prime Vice Minister of Natural Resources and Environmental Protection of the Republic of Kazakhstan, signed an agreement protocol on the transboundary management of the Irtysh river basin with the French Ministry of Regional Planning and the Environment, in Paris on 10 May 2000.

This project, which was perfectly in line with the Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes (articles 9, bilateral and multilateral co-operation, 11, Joint monitoring and evaluation and 13, Exchange of information between riparian countries) was financed by the French Fund for Global Environment (FFEM) and implemented by the **French Ministry of Regional Planning and the Environment** and its operator IOWater in association with SAFEGE and ANTEA. It aimed at allowing the different administrations responsible in Kazakhstan and Russia and the International Commission for the management of the Irtysh, to better plan their investments, in order to improve water quality and follow up the progress which has already been made.

Project activities provided technical assistance to the parties involved, through mixed working groups, the financing of punctual measurement campaigns and light equipment, the organisation of dialogue and follow-up meetings and capacity building.

As a result, the main objective of the project "Transboundary management of the Irtysh River" financed by FFEM (French Fund for Global Environment), was to formulate a framework for better international water management.

Four international working groups were created :

* Data collection and monitoring
* Developing the Irtysh River Basin Information System (IRBIS)
* Modelling water quantity according to water uses
* Institutional organisation for the setting-up of the IRTYSH International Commission

IOWater was leader of the project and directly in charge of setting up the system aiming to produce and disseminate the information on water quality and quantity, expected by the Irtysh Sub-Commission, including for public information through the Web, and for enhancing data production and modelling results.

1. About institutional aspects

The activities carried out during the project, dealt with :

- acquiring information on the work carried out by the Russian-Kazakh Commission,
- analysing the legislation of each country of the Irtysh basin in terms of water management,
- developing modern principles for water management at the level of river basins,
- proposing a structure and activities for a specific International Commission for the Irtysh valley that may later integrate China,
- analysing rules for the management and operation of Irtysh dams to outline the problems arising from these

management choices and find a solution that both parties could agree to.

2. About the Irtysh quality

The technical assistance especially dealt with the hierarchisation of the impact of different pollution sources on the basin. Industrial pollution, mining in particular, but also urban pollution. The main sources of pollution were studied in the 3 towns of Ust-Kamenogorsk, Semipalatinsk and Pavlodar, thanks to a campaign of additional measurements. I

In view of improving and modernising the basin water resources monitoringa hydrological simulation model for the Irtysh river was developed,

3. Sanitation in towns

In these three towns, it appeared that the pollution load received by each wastewater treatment plant was remaining relatively small, due to leaks in the sewerage system and the low connection percentage for waste waters.

4. Development of the Irtysh River Basin Information System - IRBIS

On the basis of existing international agreements, in order to produce and disseminate the information expected by the Irtysh Sub-Commission, and the one necessary to inform the public, and to enhance data production and modelling results, the approach adopted for the IRBIS system was to allow each country to integrate the data on its zone, while using common frames of reference.

At the end of the project, the Irtysh River Basin Sub-Commission had got a first operational information system for collection, processing and information exchanges between Kazakhstan and Russia based on :

- A common data base for the management of alphanumerical data ;
- A common geographic information system (GIS) for the cartographic enhancement of data ;
- A Web (developed in French and in Russian) for the dissemination of information.

IOWater technical assistance included :

- At the organisational level :

. Adoption of a global strategy for data collection, management and information exchange ;
. Adoption of a technical common language ;
. Training of concerned human resources to tools used (Arc-view, ACCESS).

- At the technical level, the working group especially dealt with :

. The inventory of data sources and available water related information systems ;
. The acquisition of computerised equipment necessary for the first data syntheses and for the production of the expected information ;
. The constitution of the first ACCESS common tables and GIS common layers, with in particular those concerning administative and hydrographic frames of reference ;
. A support to the organisation of available data acquisition necessary for producing information ;

. The production of the first synthetic processing (maps, lists, statistics,..).

It can be underlined that :

At the organisational level, the presented structure plans that each country will take care of data integration in its area, while using common frames of reference. This information may also be easily exchanged to meet the needs of the commission that will disseminate the obtained results on its website.

At the technical level,the working group especially took care of :

- the inventory of the organisations that collect data and/or manage information systems, and the analysis of their practices ;
- the purchase of the computerised equipment needed for the first data syntheses and for producing the expected information ;
- the creation of the first ACCESS tables and GIS layers, with, in particular, the ones on administrative and hydrographic references ;
- assistance with organising the acquisition of the required data ;
- the training of the concerned human resources on the software used (Arc-view, Access) ;

the processing of the first syntheses (maps, lists, statistics, etc.).

At project completion, the International Commission of the Irtysh River Basin had got a first operational information system, based on :
• an alphanumeric database ;
• a geographic information system for enhancing the mapping of data ;
• a web server (developed in French and Russian) for disseminating information.

The outputs of the work carried out in this Irtysh project might be usefully reused in many rivers, shared between Russia and Kazakhstan (Ural, Tobol, Ishim), and between Russia and China (Amur).