DEVELOPMENT OF SYSTEMS AND TOOLS FOR THE MANAGEMENT OF WATER RESOURCES IN THE WATER REGIONS OF WESTERN MACEDONIA, CENTRAL MACEDONIA, EASTERN MACEDONIA AND THRACE

Country

Greece

Location

Western Macedonia, Central Macedonia, Eastern Macedonia and Thrace

Client

Ministry of Development

Financing

Hellenic State & EU

Overall consultancy services

1,348,200 €

Project Duration

09/2003- 12/2007

Sub-Consultants:

Greek Biotope-Wetland Centre (EKBY),

DHI-Danish Hydraulic Institute.

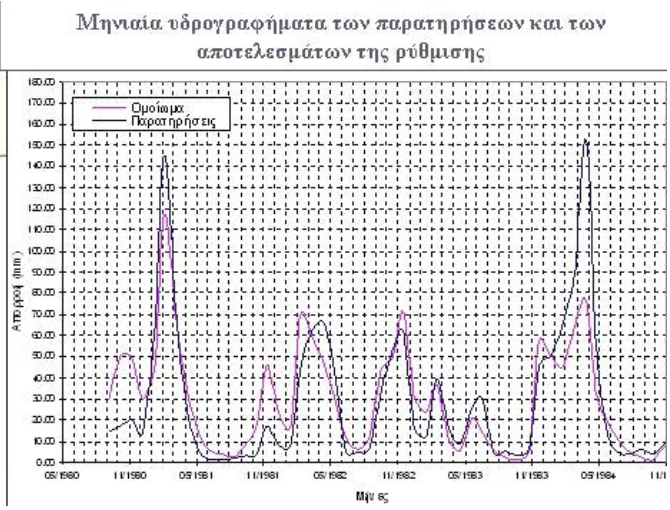
Description of the project:

The scope of the project is the development of an integrated IT- systems and applications for the management of water resources of the study area (Northern Greece), which will constitute the main administrative tool for the formation and further periodical update of the Management Plans of Water Resources per River Basin in accordance with the Water Framework Directive of the European Union Directive 2000/60/EC. The area of study is comprised of four Water Districts and divided into three Administration Districts and seventeen Prefectures covering a total of 42,800 km^2 and inhabited by 2.7 million people. **The project also deals with transboundary Rivers and Lakes including the Nestos/Mesta River (Bulgaria-Greece), Axios/Vardar River (FYROM-Greece), Strimonas/Strumna River (Bulgaria-Greece), Ardas River, Evros/Maritsa River (Bulgaria-Turkey-Greece), Djoran Lake, Prespes Lakes etc.** The implementation of the Project is materialised in the following actions:

- Recording of characteristics of the Water Districts in the region of study, with positioning maps and limits of aquatic bodies (surface and underground) and ecosystems, characterized in terms of type and situation according to the WFD.
- Recording of impacts (quantitative and qualitative) to the surface and underground waters due to the human activity.
- Recognition and depiction of protected areas in maps.
- Digital map presentation of the environment monitoring network and its results.
- Economic analysis on water uses (as set out in article 5 and Annex III of the WFD).
- Development and calibration of water basin management models (one per Water District).
- Proposals for measures, cost estimate and computation of their benefits (economic and environmental) with the application of the integrated river basin management model (RBMM).
- Training of competent personnel, proposals for the optimal exploitation of the RBMM, communication of the Project and its conclusions to the public (as article 14 of the WFD).

ENB's technical approach is based on *three mutually interconnected software components* of an integrated hydraulic model and a common geodatabase :

- The MIKE INFO GIS-based Water Resources information system for storage of all spatial and time series information, relevant info for the resource assessment as well as on the use and demand of the water.
- The MIKE SHE integrated hydrological/hydrogeological modelling system.
- The MIKE BASIN operational water management model.

Types of services provided

- Extensive data collection (hydrological, geo-hydrological, meteorological, environmental, base maps, water uses, economic indicators etc.)
- Importing of existing data and quality controlling
- Processing and organizing of new data acquired
- Design of a geodatabase (ArcGIS)
- Developing of custom applications in the GIS environment
- Developing of data management tools and interfaces
- Calibrating and validating the hydraulic models for river basin management
- "Running" scenarios for the basins and building of an integrated decision support system (DSS)
- Economic analyses
- Full Training for all applications and software packages
- Web-Site design and maintenance
- Presentation of the project to the Public