

**SECTION 5: EXECUTIVE PUBLISHABLE SUMMARY, RELATED TO THE OVERALL PROJECT DURATION**

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Contract n°	EVK1-CT-2001-00099	Project Duration: 01 January 2002 – 31 December 2004	
Title	The Tisza River Project; Real-life scale integrated catchment models for supporting water- and environmental management decisions		

**Objectives:**

The general objective was to save the water resources and ecological values with the help of integrated catchment management tools and to secure the sustainable use of the resources of the Tisza River Basin. The scientific objective was to develop a “real-life-scale” integrated catchment model system. In this the term “real-life scale” means the development (and selection) of practical application oriented set of tools, (set of computer models for water flow, water quality and ecosystem functioning), that are exactly tailored to the issues to be solved and the availability of data. The establishment of an international database of the Tisza River Basin was also a major objective.

**Scientific achievements:**

The overall scientific achievement is a set of divers products that can be grouped, rather arbitrarily, into the following main categories: 1/ models, developed for and/or adopted to the Tisza River Project, which include hydrological and hydraulic models, water quality models, ecosystem models and other model-like calculation tools to support the use of these models. A relatively large set of these models was developed and applied to the river basin and to its sub-basins, to various rivers and to selected wetlands (oxbow lakes) along the river system. The models were used for the analysis of various management strategies with due concern to the requirements of the Water Framework Directive and to other national strategies 2/ An international database of the Tisza River Basin accessible via the web-based Tisza River Information System TRIS. This system, filled with the available GIS, monitoring and other data, is still operational, at the time of writing this report and attempts are being made to maintain the system beyond the time frames of the project 3/ A very complex set of ecological, chemical and hydrological (ecohydrological) measurements and data evaluation results that stemmed from an intensive field programme of a high number of wetlands (oxbow lakes) along the floodplains of the rivers of the Tisza River Basin. The scientific achievements include among others a so far unmatched evaluation of the state of these wetlands (also by internet based international system), novel ecohydrological approaches to revitalisation, and modelling based analysis of revitalisation scenarios. 4/ To the last group we listed a number of other written products (mostly reports of the consortium partners and their sub contractors) that also contained some important scientific achievements, like the forecasting of climate-change induced flood scenarios and descriptions of novel-traditional ecohydrological approaches to floodplain and wetland management, etc.

**Main deliverables:**

The main deliverables, as of the work-plan, were as follows. All deliverables were, or are being, produced in time: D1/ www site (see: [www.tiszariver.com](http://www.tiszariver.com)); D2/ Progress reports (all reports were sent to the EU in time); D3/ Workshop reports (for internal use only), 5 major workshops were held with the participation of all partners and there were a number of smaller workshops for various work packages; D4/ Technical reports; the final versions (section 1, 3, 4 and 6 reports, are being produced); D5/ Hardcopy deliverables for end users (will be produced, also in the form of the demonstration software discussed below); D6 and D7/ Meta data system and internet based hybrid

data base; It is operational but raises the issue of maintaining the data base beyond the project time-frame; D8/ Hydraulic and hydrological models; various forms and versions are operational for sub-basins and for the flat-land river system; D9/ The catchment model of the Tisza Basin;- all models (hydraulic, hydrological, water quality, ecological) mentioned above are considered as parts of this catchment model; D10/ Scientific publications: high number of papers and book chapters have been written by the partners and many more will be produced after the completion of the Project; D11/ Final reports (will be produced by 28 February, 2005, this material being one of the six final reports); D12/ CD ROM: being produced, called MoRes, showing all model results; D13/ General input/output reports; many such reports were produced for supporting various WPs, and will be attached to the hard copy reports on a CDs.

#### **Socio-economic relevance and policy implications:**

The outputs of the project may have a series of very important bearings on both the achieving of the social and the economic objectives of the nations of the Tisza River Basin and also may have significant impact on those of the Community as a whole. This is so because the three main problem areas addressed in this Project (simulation of flood scenarios and flood control strategies; simulation of water quality conditions –also of accidental spills– and analysis of water pollution control strategies; and the evaluation of the state of unique wetland ecosystems, with outlooks to revitalisation) have a very strong –if not deterministic– impact on both the economic conditions and on the quality of life in this river basin, which latter is predominantly defined by that of the water. The Major policy implication is that the results of this project (the data base and the models) can provide vital assistance to the River Basin Management Planning required for the Water Framework Directive (**especially if they are maintained for future uses**).

#### **Conclusions:**

The most important conclusion is that all objectives of the project have been achieved. This also means that integrated catchment models (set of various modelling tools, supported by a basin-wide database of GIS, monitoring and other data) are, or rather could be, very efficient tools in predicting the likely outcome of various natural and man-induced processes, thus providing a management and decision support tool. However, this will only be achieved if the whole system is kept alive for future applications. Namely compliance with the major objective of providing support to the solution of water and environmental management issues can only be achieved (in any project) if the tools, the models and the international database, are being maintained and continuously updated beyond the time frames of the project.

#### **Dissemination of results:**

The dissemination of results is a key issue after the completion of this project (and of any other projects). Namely, in the case of a project dealing with the complex matters of a large international river basin the most important thing is (should be) to ensure, on the long run, exploitation of the results by all interested parties of the river basin and by the Community as a whole. To do so it would be essential to secure the maintenance and continuous upgrading of the international database this project produced, along with the also continuous upgrading and expansion (in properties, time and space and in terms of calibrating against new sets of data) of the system of models developed and applied. This needs a continuous support. Thus the dissemination of the results of this project is done (at the time of closing the project) in the form of the home-page of the project, which has a link to the Tisza River Information System, TRIS, which was also designed to show all important results of the Project. Since at the time of writing the final Section 5 report of the project the maintenance of TRIS beyond the time frames of the project is still an issue to be solved, another ways of disseminating the results are also considered. One of these ways and means is an eye-catching type demonstration-software, called MoRes, produced for the purpose, which will be able to demonstrate the major outcomes of the project and can be disseminated in various ways (e.g. from the home pages of the partners of the Tisza River Project.)

**Keywords: The Tisza River Basin; Integrated catchment models, floods, accidental pollution, wetlands, ecohydrology, pollution control, International database,**