



# INTERNATIONAL WATERS EXPERIENCE NOTES

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## Development and Endorsement of an International River Basin Management Plan



The Tisza River Basin is the largest tributary of the Danube River and includes part of the territory of Ukraine, Slovak Republic, Hungary, Romania and Republic of Serbia. Unfortunately, the region faces threats from pollution (nutrient, organic, hazardous substances) and river engineering as well as from floods and droughts. Taken into account outlined pressure the Tisza River Basin countries have prepared the Integrated River Basin Management Plan (ITRBM Plan), which includes the next steps and long-term actions to reach good status of the water of the Tisza River Basin by 2015. Improving the linkages and integration with planned flood protection measures is needed to ensure that regional and local measures can be implemented with minimal competition between the needs to protect property and lives from flood events with alternative approaches to mitigating peak floods whilst ensuring maximum benefit to the riverine ecosystems. The Tisza River Basin cooperation with the development of an integrated approach to river management can serve as an important experience for other river basins. On the 11 April 2011 in Ukraine Tisza Ministers and High Level representatives of the countries adopted the ITRBM Plan and updated the Memorandum of Understanding to express their commitment to the Integrated Tisza River Basin Management Plan and pledge to continue the efforts needed to achieve goals.

**UNDP/GEF Tisza Project**

# Development and Endorsement of an International River Basin Management Plan

Experience of the GEF - sponsored

## GEF/UNDP Integrating multiple benefits of wetlands and floodplain into improved transboundary management for the Tisza River Basin

GEFID: 3339, UNDP: 2617

### PROJECT DESCRIPTION

The Tisza River Basin is the largest tributary of the Danube River and includes part of the territory of Ukraine, Slovak Republic, Hungary, Romania and Republic of Serbia. Over the last 150 years the basin has been subject to significant anthropogenic impacts that have resulted in a significantly degraded system, particularly in terms of pollution and the loss of floodplains and wetlands. The countries of the basin have requested support to develop an integrated strategy for water quality and water quantity that is incremental to the current work and to implement demonstration projects that test the multiple environmental benefits of wetlands to mitigate impacts of floods and droughts and help to reduce nutrient pollution.



Tisza River Basin: Overview

The UNDP/GEF Tisza Project (*Integrating multiple benefits of wetlands and floodplains into improved transboundary management for the Tisza River Basin*) has worked closely with the Tisza countries and

the International Commission for the Protection of the Danube River (ICPDR) to develop an Integrated Tisza River Basin Management Plan (ITRBMP). The Project had a focus on wetlands and floodplains to encourage further restorations of these important river basin features that have been lost due to intensive farming and flood protection and undertook three pilot projects addressing land and water management in addition to the co-ordination of the ITRBM support.

The ICPDR is an international organisation consisting of 14 cooperating states and the European Union. Since its establishment in 1998, the ICPDR has grown into one of the largest and most active international bodies engaged in river basin management in Europe. Its activities relate not only to the Danube River itself, but also the tributaries and the ground water resources. The ultimate goal of the ICPDR is to implement the Danube River Protection Convention by promoting and coordinating sustainable and equitable water management, including conservation, and improvement and rational use of waters for the benefit of the Danube River Basin countries and their people.

The Project's objectives were:

- To integrate water quality, water quantity, land use, and biodiversity objectives within integrated water resources/river basin management (IWRM/IRBM) under the legal umbrella of the EU and ICPDR, and;
- To begin implementation of IWRM principles through the testing of new approaches on wetland and floodplain management through community-based demonstration. The community-level pilot activities will link to the development and implementation of an agreed river basin management plan following the principles of IWRM and tested at the regional/local level under the governance arrangements established for management of the Tisza River Basin. The integration of water quality and quantity management is considered to be a significantly innovative approach in the basin and the results of this will be utilised elsewhere in the Danube River Basin through catalytic policies and actions of the ICPDR.

A sub- component of the project was to develop a basin-wide integrated river basin management plan for the Tisza River Basin. The objective was to mitigate pollution from organic, nutrient and hazardous substances pollution, and pressures due to river engineering, floods and droughts and climate change. An important goal was to demonstrate multiple benefit of wetlands in the Tisza River Basin. The work was managed and facilitated via the Project Implementation Unit with the contribution of ICPDR technical and national experts involving all five Tisza countries and the European Commission. Work was done with the contribution of national and regional stakeholders and experts from the demonstration projects.

## THE EXPERIENCE

### Issue

The Tisza River Basin is an area rich in biodiversity, providing habitats for many species no longer found in other parts of Europe. Many areas of the region, including nature reserves and national parks, are important ecological assets. Unfortunately, the region faces threats from pollution (nutrient, organic, hazardous substances) and river engineering as well as from floods and droughts.

The Tisza River Basin countries (including three European Union (EU) and two non-EU countries) have prepared the Integrated River Basin Management Plan, which includes the next steps and long-term actions to reach good status of the water of the Tisza River Basin by 2015. It builds on the principles of EU water legislation, in particular the Water Framework Directive, and identifies major water quality issues. But it goes beyond this to cover water quantity aspects in similar depth and discusses how to strengthen relations between quantity and quality management, anticipating directives such as the EU Flood Risk Management Directive and the EU Water Scarcity and Droughts Action Plan. The plan helps countries to design and implement measures to reduce pressures resulting from organic, nutrient, hazardous substances pollution and river engineering changes, as well as strategies to address measures which might have positive impacts in relation to both water quality and quantity by mitigating floods and droughts, improving land management and reconnecting floodplains and wetlands.



## Water quality related pressures on the ecosystems of the Tisza River Basin



Nutrient Pollution



Organic Pollution



Hazardous Substance  
Pollution



Pressure from river  
engineering works

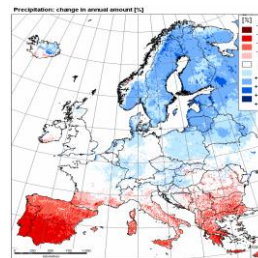
## Water quantity related pressures on the ecosystems of the Tisza River Basin



Floods



Drought



Climate change

## Addressing the Issue

The initial step in developing the Management Plan for the Tisza River Basin, was to scale down the results of the recent UNDP/GEF Danube Regional Project to the Tisza Sub-basin, in order to assure that the ITRBM Plan will be developed from both a 'top-down' and a 'bottom-up' perspective. This 'scaling down' of a Danube Basin programme to its sub-basin, the Tisza River Basin, was an important step in bringing the results of the Danube Regional Project to the community level and assuring that the management plan for the Tisza River Basin was developed from both a 'top-down' (working with representatives of ministries) and a 'bottom-up' (through community-based demonstration) perspective.

In 2007 the cooperation between the five Tisza countries resulted in the first analysis of the Tisza River Basin (equivalent to a GEF Transboundary Analysis) highlighted the issues for the region that were further elaborated in the Integrated River Basin Management Plan (equivalent to a GEF Strategic Action Programme). The UNDP/GEF Tisza project and ICPDR Tisza Group experts recognized the significance of the linkage between water quality and water quantity aspects of waters, emphasizing that successful water quality management can not exist without suitable linkage to the water quantity management. Key to these discussions on integration was a stakeholder workshop to discuss the significance and meaning of 'integration' including both water quantity/quality and land/water management issues.

During the project period strategies were developed on national and transboundary level related on integration, flood/drought management and nutrient pollution reduction. National scale integration and flood/drought management strategies (together ten national strategies) and transboundary scale integration, flood/drought and nutrient pollution reduction strategies were developed (three transboundary scale strategies), which were integrated and compiled together resulted in one overall Integrated Tisza River Basin Management Plan (ITRBM Plan).

The ITRBM Plan summarizes pressures, indicates the status of the rivers of the Tisza River Basin, outlines visions and management objectives and related Tisza Programme of Measures to reach good water status in the Tisza River Basin by 2015.

The visions and management objectives of the Integrated Tisza River Basin Management Plan reflect the enormous joint approach among all Tisza River Basin countries. At the same time, they support the achievement of the EU Water Framework Directive objectives in this very large, unique and heterogeneous European river basin.

Experts met every year two times to discuss the ITRBM Plan and to reach common agreement on the content and final conclusions of strategies. Experts were represented all the Tisza countries and the European Commission. In the frame of the project six Tisza Group meetings, six UNDP/GEF Tisza project workshops, two stakeholder conference and several public hearings, integration workshops and consultations were held and organized.



Experts meet to discuss on the ITRBM Plan  
(Ukraine, 2010)



Discussion with Stakeholders  
(Ukraine-Slovakia Demonstration projects Integration  
Workshops (2010)

## RESULTS AND LEARNING

### Preliminary assumptions on the impact of the planned Tisza Programme of Measures

The *reduction of organic pollution* from wastewater is expected to be significantly higher in the Tisza River Basin than in the Danube River Basin, since many Tisza communities will have constructed secondary treatment facilities for wastewater. In addition, the effect of the urban wastewater treatment measures will be more visible for the smaller scale of the Tisza River Basin than for the Danube River Basin.

*Reducing nutrient pollution* by introducing wastewater treatment plants depends on the specific situation in the countries. Connecting remote villages to wastewater treatment plants is cost intensive and may require a long time before households can be connected to a central system.

The reduction goals will probably not be met in time for the Tisza River Basin, as agricultural practices are expected to intensify for some countries, which could even lead to an overall increase in pollution to the Tisza River Basin. However, some reduction goals could be reached by implementing a ban on phosphates in laundry detergents alone. This relatively cost effective and easily implemented measure will be one of the first solutions to be realized with the Tisza River Basin Countries having adopted a basin-wide ban on laundry detergents containing phosphates.

Measures to *reduce or eliminate hazardous substances* need to be based on a variety of approaches addressed to individual pressures and sectors. Best Available Techniques for industrial sources – including technological changes in the production process and substitution of specific substances – have been proven to bring significant reduction in a short time period. For agriculture, implementing Best Environmental Practices and an immediate pesticide ban for the most hazardous priority pesticides would also reduce input of hazardous substances in the Tisza River Basin.

As of 2009, 240 *interruptions* of river and habitat continuity (these are the results of river engineering, including dams, dykes, etc.) are located in the Tisza River Basin. Fortunately, the Tisza countries have reported that measures like the construction of fish migration aids will be undertaken by 2015. However, for some 137 interruptions, river continuity will remain impassable for fish migration by 2015. Good ecological status and good ecological potential may not be ensured then, but it is likely that these objectives can be achieved after 2015.

While it is clear that in some cases, structural solutions like dyke and bank reinforcements are needed to protect urban settlements, space for rivers should be the overarching strategy for sustainable flood protection measures within the Tisza Basin. Identifying measures that have benefits for both flood protection and nature protection (win-win measures) are part of such 'space for the river' strategies.

Demonstration projects of non-structural measures, such as the concept of 'making space for rivers' (e.g. UNDP/GEF Tisza Project in the Bodrog basin and Integrated Land Development project), will help to illustrate both the environmental and economic benefits of such approaches while still achieving the overall objectives of reducing the harmful impacts of floods.

Wetlands reconnection has a positive impact on limiting the damages of floods, land use management and on other water quantity aspects of the basin. Compared to the Danube River Basin, the Tisza countries have more potential to 'give space to the rivers', thus restoring unique environments. In the Tisza River Basin, 17,306 ha of wetland areas with the potential for reconnection were identified in 2009. By 2015, some 2,651 ha are expected to be reconnected to the Tisza Rivers and 1,662 ha will be reconnected in Slovakia after 2015. An additional 12,993 ha are expected to be reconnected to the Tisza Rivers in Ukraine by 2021. The measures in Ukraine are mainly for flood protection in the Upper Tisza.

Improving the linkages and integration with planned flood protection measures is needed to ensure that regional and local measures can be implemented with minimal competition between the needs to protect property and lives from flood events with alternative approaches to mitigating peak floods whilst ensuring maximum benefit to the riverine ecosystems.

## REPLICATION

The Tisza River Basin cooperation serve as an important experience for other ongoing sub basin activities such as Sava River Basin or Danube Delta cooperation. Conclusions on integration of water quality and water quantity will be further taken into account in Danube Basin wide scale as well. The ICPDR institutional framework facilitated and helped agreement on common methodology during the development of the ITRBM Plan. Moreover the DanubeGIS database made it possible for the UNDP/GEF Tisza experts to analyze common dataset on transboundary wide scale. The UNDP/GEF Tisza project facilitated the development of a network between interested sectors of integrated river basin management planning (land use management, water quality management and water quantity management related sectors) ensuring representation of the sectors in both high level (ICPDR Heads of Delegations, ICPDR Tisza Group) and stakeholder level (demonstration projects, observers)

## SIGNIFICANCE

The Integrated Tisza River Basin Management Plan is more than just a document; it represents a commitment by all Tisza countries to implement the measures needed to achieve real integration and coordinated sustainable development in the basin. The continued involvement by the ICPDR and the Tisza Group will serve to monitor the progress of implementation and provide necessary support for the international efforts.

On 11 April 2011, in Uzhgorod, Ukraine the Tisza Ministers and High Representatives of the countries adopted the ITRBM Plan and updated the Memorandum of Understanding to express their commitment to the Integrated Tisza River Basin Management Plan and pledge to continue the efforts needed to achieve its goals.



Pictures of the Tisza Ministerial Meeting (11 April 2011, Uzhgorod, Ukraine) – adoption of the Tisza Memorandum of Understanding to strengthen Tisza River Basin Cooperation

## REFERENCES

Diana Heilmann ([diana.heilmann@unvienna.org](mailto:diana.heilmann@unvienna.org)) and Peter Whalley ([pdwhalley@btinternet.com](mailto:pdwhalley@btinternet.com))  
UNDP/GEF Tisza Project website: [http://www.icpdr.org/icpdr-pages/tisza\\_undp\\_gef.htm](http://www.icpdr.org/icpdr-pages/tisza_undp_gef.htm)

## KEYWORDS

- ◆ River basin
- ◆ Good water status
- ◆ Transboundary
- ◆ Integration
- ◆ Water quality and water quantity
- ◆ Water and land management
- ◆ Nutrient Reduction

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