

## How the WETLAND CAN BE WON

In the latest issue of the International Innovation Report Dr. Istvan Zsuffa and Jan Cools give an account of the developments in WETwin. Read the entire article in this newsletter.

International Innovation | Environment | 2011 Issue 1



### How the wetlands can be won

Wetlands are valuable ecosystems whose management is vital for the wildlife and communities that rely on them. Dr István Zsuffa and Dr Jan Cools are developing knowledge about wetland management practices and guidelines for their improvement with a view to shaping policy

**Could you give an overview of the WETwin project and explain what need it seeks to address?**

JC: Planning and management of water resources in river basins is becoming increasingly complex. The WETwin project focuses on five case study wetlands in Africa and South America. In these areas, many communities depend on – and may even have conflicts over – the ecosystem services provided by the river basin and/or wetlands. At the same time, many river basins can be sensitive to land use changes, demographic growth and climate change. Whilst many tools and approaches have been developed to try and meet the challenges facing wetlands and those who manage them, the adoption and use of them is lagging behind. By twinning the case study wetlands with three European wetlands, WETwin hopes to provide examples of wetland management practices and strategies from the EU, which will feed into guidelines that can be applied internationally.

**Why do you think that many wetlands still lack sustainable management and are insufficiently integrated into river basin management?**

IZ: Despite the existing international conventions, national legislations, and a wide body of information on wetland management, many countries are still lacking clear policies focusing on the conservation and sustainable management of wetlands.

**Furthermore, institutional support for wetland management is also insufficient. Wetlands are often zones of overlapping interests between development sectors and jurisdictions. Frequently, governments do not sufficiently appreciate the important ecosystem functions of wetlands, and the direct value that can be derived from converting them to agricultural land, for instance is easier to estimate than the indirect use and non-use values such as water purification, flood protection or biodiversity.**

By what means is WETwin contributing to reducing the implementation gap?

JC: We have generated discussion with stakeholders and local authorities about the implementation gap and opportunities there are to reduce it. Based on that and together with stakeholders, we have made an inventory and outlined further prioritisation of management options. From this, we developed a methodology to evaluate the suggested management options, which is now being applied. One of WETwin's significant outcomes and an example of how the project has informed policy is direct input into the local management plans (wetland and/or river basins). We feel we can do this locally, by having stakeholders on board from the beginning and by making sure that policy briefs will be developed in English, French and Spanish (local case study languages) as well as easy-to-read summaries on the most important results.

**What methodology have you developed for the evaluation of wetland management solutions?**

IZ: A Decision Support Framework (or toolbox) has been developed for the generation, evaluation and ranking of wetland management solutions. For evaluation, the framework applies various simulation models, as well as qualitative expert-judgement based methods. Ranking of the solutions is carried out with the help of Multi Criteria Analysis tools, which take into consideration the different preferences of the stakeholders and decision makers. The complexity of the problems requires advanced management solutions, which incorporate land use change, institutional and legal factors, besides the classical technological options.

JC: The methodologies we are using have been adapted to be more easily integrated in the actual management context and allow us to integrate both hard data (simulations, measurements) and soft data (expert judgment, estimates). In line with the European Water Framework Directive, results are converted into easily understandable classes (such as bad, moderate, good, or very good) that we call scores.

**How does the toolbox you have developed account for the diversity of case studies and different levels of complexity?**

JC: The scoring system allows us to take the different ranges of diversity and complexity into account. This approach can deliver results quickly, and might reveal points that need to be looked at in more detail, which might be linked to the scale, complexity or intended use.

IZ: The toolbox is essentially a framework in which, depending on the case specific conditions, different tools can be inserted for carrying out a given task. For example, distributed hydrological and water quality models are used where data availability makes it possible, while lumped models or expert judgements are applied where data availability doesn't allow for anything more sophisticated.

90 INTERNATIONAL INNOVATION

**WETWIN AIMS** to enhance the role of wetlands in basin scale integrated water resource management, with the aim of improving the community service functions while conserving good ecological status.

WETwin sets forward the following goals:

- Improve drinking water and sanitation services of wetlands;
- Improve the community services while conserving or improving good ecological health;
- Adapt wetland management to changing environmental conditions;
- Integrate wetlands into river basin management

### FOR FURTHER INFORMATION ON WETWIN YOU CAN CONTACT:

ISTVÁN ZSUFFA | ISTVAN.ZSUFFA -@- VITUKI.HU

TOM D'HAeyer | TOM.DHAeyer -@- ANTEAGROUP.BE

THE CONTENTS OF THIS NEWSLETTER ARE THE SOLE RESPONSIBILITY OF THE WETWIN PROJECT. THE EUROPEAN COMMUNITY IS NOT LIABLE FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.

CONTRIBUTED TO THIS ISSUE: ISTVÁN ZSUFFA, TOM D'HAeyer, JAN COOLS,

# How the wetlands can be won

Wetlands are valuable ecosystems whose management is vital for the wildlife and communities that rely on them. **Dr István Zsuffa** and **Dr Jan Cools** are developing knowledge about wetland management practices and guidelines for their improvement with a view to shaping policy



**Could you give an overview of the WETwin project and explain what need it seeks to address?**

**JC:** Planning and management of water resources in river basins is becoming increasingly complex. The WETwin project focuses on five case study wetlands in Africa and South America. In these areas, many communities depend on – and may even have conflicts over – the ecosystem services provided by the river basin and/or wetlands. At the same time, many river basins can be sensitive to land use changes, demographic growth and climate change. Whilst many tools and approaches have been developed to try and meet the challenges facing wetlands and those who manage them, the adoption and use of them is lagging behind. By twinning the case study wetlands with three European wetlands, WETwin hopes to provide examples of wetland management practices and strategies from the EU, which will feed into guidelines that can be applied internationally.

**Why do you think that many wetlands still lack sustainable management and are insufficiently integrated into river basin management?**

**IZ:** Despite the existing international conventions, national legislations, and a wide body of information on wetland management, many countries are still lacking clear policies focusing on the conservation and sustainable management of wetlands.



Furthermore, institutional support for wetland management is also insufficient. Wetlands are often zones of overlapping interests between development sectors and jurisdictions. Frequently, governments do not sufficiently appreciate the important ecosystem functions of wetlands, and the direct value that can be derived from converting them to agricultural land, for instance, is easier to estimate than the indirect use and non-use values such as water purification, flood protection or biodiversity.

**By what means is WETwin contributing to reducing the implementation gap?**

**JC:** We have generated discussion with stakeholders and local authorities about the implementation gap and opportunities there are to reduce it. Based on that and together with stakeholders, we have made an inventory and outlined further prioritisation of management options. From this, we developed a methodology to evaluate the suggested management options, which is now being applied. One of WETwin's significant outcomes and an example of how the project has informed policy is direct input into the local management plans (wetland and/or river basins). We feel we can do this locally, by having stakeholders on board from the beginning and by making sure that policy briefs will be developed in English, French and Spanish (local case study languages) as well as easy-to-read summaries on the most important results.

**What methodology have you developed for the evaluation of wetland management solutions?**

**IZ:** A Decision Support Framework (or toolbox) has been developed for the generation, evaluation and ranking of wetland management solutions. For evaluation, the framework applies various simulation models, as well as qualitative expert-judgement based methods. Ranking of the solutions is carried out with the help of Multi Criteria Analysis tools, which take into consideration the different preferences of the stakeholders and decision makers. The complexity of the problems requires advanced management solutions, which incorporate land use change, institutional and legal factors, besides the classical technological options.

**JC:** The methodologies we are using have been adapted to be more easily integrated in the actual management context and allow us to integrate both hard data (simulations, measurements) and soft data (expert judgment, estimates). In line with the European Water Framework Directive, results are converted into easily understandable classes (such as bad, moderate, good, or very good) that we call scores.

**How does the toolbox you have developed account for the diversity of case studies and different levels of complexity?**

**JC:** The scoring system allows us to take the different ranges of diversity and complexity into account. This approach can deliver results quickly, and might reveal points that need to be looked at in more detail, which might be linked to the scale, complexity or intended use.

**IZ:** The toolbox is essentially a framework in which, depending on the case specific conditions, different tools can be inserted for carrying out a given task. For example, distributed hydrological and water quality models are used where data availability makes it possible, while lumped models or expert judgements are applied where data availability doesn't allow for anything more sophisticated.

# Developing sustainable wetland management

**WETwin** brings together partners from across the world to study important issues around wetland management, striking a balance between serving the community and preserving the ecology of these habitats

**WETLANDS ARE UNDER** threat from a number of factors and, especially in developing countries, they are still being converted into rice fields or drained and turned into settlements. Dr Jan Cools and Dr István Zsuffa head up the exciting international team that forms WETwin – an EU Seventh Framework Programme (FP7) project which is researching wetland management practices by twinning case study wetlands in Mali, Uganda, South Africa and Ecuador with examples in Germany, Austria and Hungary.

Wetlands are deemed valuable by many authorities. The services and products (eg. wild products, flood buffering, building material, etc.) they deliver for local livelihoods are insufficiently known, valued and understood, as Cools explains: “Wetlands are still seen too much as resources ‘for nature only’. This is the case both in the EU and developing countries; although the services that are considered important differ, for example, flood buffering is a hot issue in Europe, while in Africa the natural materials are very important”.

The overall objective of WETwin is to enhance the role of wetlands in river basin management, and to this end aims to fulfill the following goals:

- Develop management strategies for improving the community services while conserving or improving good ecological health

- Assess vulnerability and adapt wetland management to changing environmental conditions

- Learn lessons on the integration of wetlands into river basin management

## THE IMPLEMENTATION GAP

Whilst wetland management plans do exist in the developing countries in which WETwin’s case studies are located (Uganda, Mali and South Africa), Cools and Zsuffa found that their implementation was limited. They also found

Whilst wetland management plans do exist, Cools and Zsuffa found that their implementation was limited

a lack of integration and coordination (vertical and horizontal) of sectoral and river basin management plans, and a limited involvement of stakeholders in decision making, especially at local level. Added to this, they also discerned a major gap in the information related to

operational planning and management, reflecting the real problem of the availability of the information at the local level, and probably indicating the lack of transparency in decision making and the lack of capacity for the provision of such information. It is to this situation that WETwin in part responds, by the development of tools and recommendations that can be used in actual wetland management planning, including a review of pros, cons, development needs, challenges to implementation and improvements to the data-scarce conditions that prevail in many developing countries.

## TWINNING – A DUAL PERSPECTIVE

By twinning European case studies with those in developing countries, WETwin has fostered a unique dual perspective. The project team has been able to make some interesting observations with respect to the integration of wetlands into river basin management (RBM). They observed that wetland managers are mostly from agencies or ministries representing interests in nature rather than in water, and that these managers often don’t see what the wetland could bring to the river basin, believing that wetlands need to be integrated in a river basin for the sake of the wetland (and its associated nature and biodiversity). In the EU, the team observed, after a review of some of the new River Basin Management Plans (RBMP) and interviews with

## INTELLIGENCE

# WETWIN

### ENHANCING THE ROLE OF WETLANDS IN INTEGRATED WATER RESOURCES MANAGEMENT FOR TWINNED RIVER BASINS IN THE EU, AFRICA AND SOUTH-AMERICA IN SUPPORT OF EU WATER INITIATIVES

#### OBJECTIVES

The objective of the project is to enhance the role of wetlands in basin scale integrated water resource management, with the aim of improving the community service functions while conserving good ecological status.

#### PARTNERS

**VITUKI Environmental and Water Management Research Institute Non-profit Ltd**, Hungary (coordinating partner)  
**NGO Wetlands International**, Mali  
**ANTEA Group**, Belgium  
**Potsdam Institute for Climate Impact Research**, Germany  
**Wasserkluster Lunz**, Austria  
**UNESCO-IHE Institute for Water Education**, the Netherlands  
**National Water and Sewerage Corporation**, Uganda  
**International Water Management Institute**, South Africa  
**Escuela Superior Politécnica del Litoral**, Ecuador

#### FUNDING

Funded under the European Commission's Seventh Framework Programme (FP7)

#### CONTACT

**Dr István Zsuffa**  
Project Coordinator

Vituki  
Kvassay Jenő út 1  
H-1095 Budapest  
Hungary

T +36 121 56140  
E zsuffa.istvan@vituki.hu

[www.wetwin.net](http://www.wetwin.net)

**ISTVÁN ZSUFFA** received his PhD in hydraulic engineering in 2001 at the Wageningen University, The Netherlands. His research field covers hydrology, hydrodynamics, ecology and operational research.

**JAN COOLS** is project manager with the Belgian engineering company ANTEA Group. He is an expert in multidisciplinary river basin management and has had a key role in several European funded projects.

both wetland and river basin managers, wetlands are weakly entered into the RBMPs. This is for two reasons, according to Cools: "Wetlands are perceived as existing on a scale of local importance while river basins are valued on a much larger one; and wetlands are seen as an additional layer of complexity, for which data is often lacking," he explains. However, with the Flood Risk Directive now in place in Europe, we are now seeing win-win situations being created. Wetlands restoration (or conservation) is seen as a solution to help against floods and to adapt for the impacts of climate change.

#### ADAPTING TO CHALLENGES

The methodologies that WETwin are using are not new – impact assessment, trade-off analysis and vulnerability analysis have already existed for some time – but researchers have faced challenges in the application of them in a wetland or river basin management context. Such methodologies have been developed by scientists, and applications (including data collection) are based on a long-term research project. They require a lot of data, and whilst they can generate useful results for scientists, the pure value of the simulation or the measurement often fails to communicate much to non-experts.

WETwin's adopted approach means that in the first phase approximate, qualitative scores are given to a number of multidisciplinary indicators. If, and when, more detailed, more quantitative data is available, the preliminary qualitative value can easily be updated. The biggest advantage of this approach is that all aspects (livelihood, costs, efficacy, social acceptance, health impacts, etc.) important for decision makers are taken into account and integrated into the process.

#### THE NABAJJUZI WETLAND

One of the case studies that WETwin has been working on is the Nabajjuzi wetland in Uganda. Nabajjuzi is an internationally protected Ramsar site, but centrally located on it is also the city of Masaka, which pumps its drinking water out of the

wetland and also discharges its waste water there (after a first waste water treatment). The wetland also reduces flood impacts and provides food and raw materials for the local population. The fertile soils in the upstream catchment are used for intensive agriculture. Masaka is a rapidly growing city, and bigger inflows of drinking water and food are expected, along with bigger outflows of waste water. The challenge is to manage the city (and rural villages), agricultural land and wetland sustainably, such that their mutual dependence can be preserved. This makes it an ideal case study, as Zsuffa explains: "There are considerable tradeoffs between these services, which makes the case especially suitable for WETwin's Multi Criteria Analysis approach". The MCA approach takes into consideration all relevant goods and services by means of appropriate indicators and criteria, and then identifies management strategies that represent good compromises among the trade-offs.

#### MAKING WAVES BEYOND WETLANDS

Cools and Zsuffa hope that the approaches developed in WETwin will be used for other wetlands across the world as well. They are currently in communication with the Ramsar convention as a means to spread their work under the wetland managers of the world, and hope to give a workshop at the Ramsar COP (Conference of Parties) where representatives of many wetland authorities of the world are gathering alongside wetland experts.

A follow-up project to WETwin, called AFROMAISON – also funded under EU FP7 – is already on its way. AFROMAISON will continue the efforts to bridge the implementation gap and broaden the scope from wetlands to a range of habitats and natural resources (not only water, but also land and forest). The project's focus is on Africa, and is currently looking at five sites: Uganda, South Africa, Tunisia, Ethiopia and Mali. By continuing the work of WETwin in this way, its impact looks set to be considerable, both for the sustainable management of natural resources, and the lives of those that use them.



IRRIGATION CANAL IN THE INNER NIGER DELTA, MALI

© WETLAND INTERNATIONAL

