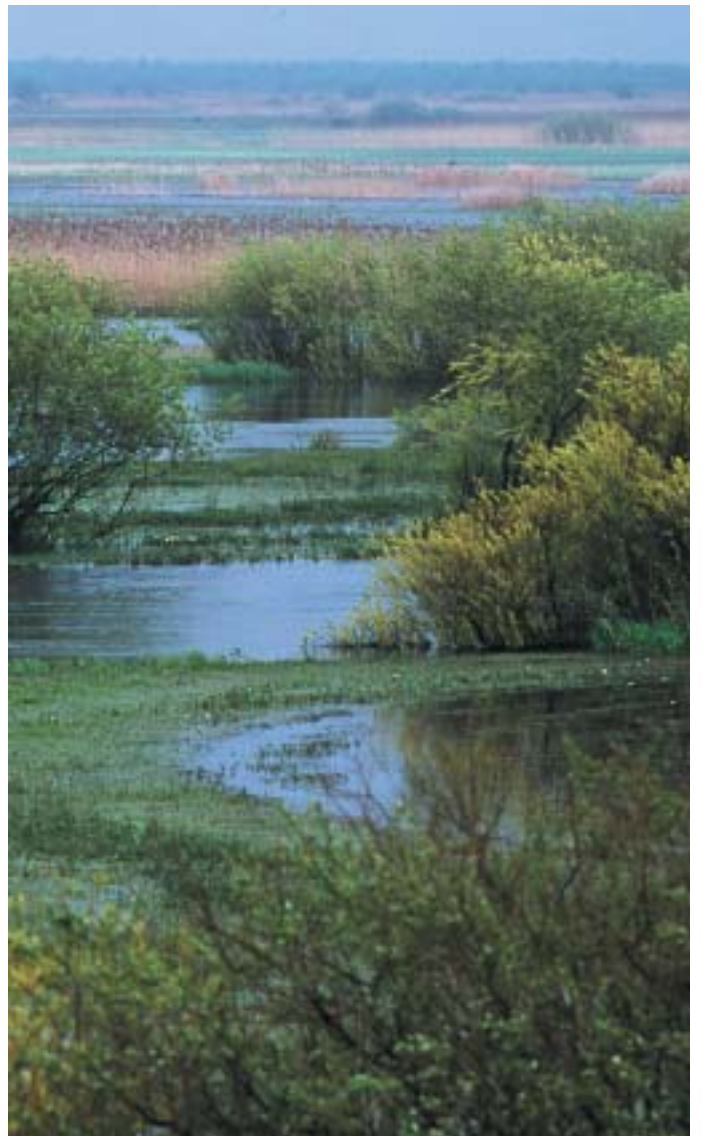




# WWF's Water and Wetland Index

*Critical issues in water policy across Europe*



# WWF's Water and Wetland Index

## Critical issues in water policy across Europe – November 2003

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**Text:** Lucia De Stefano (Water and Wetland Index Co-ordinator) and Tania Paschen (Communications Manager), WWF Living Waters Programme - Europe

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If you wish to have further information about the project or receive an electronic copy of this paper, please contact:

### WWF European Living Waters Programme - Europe

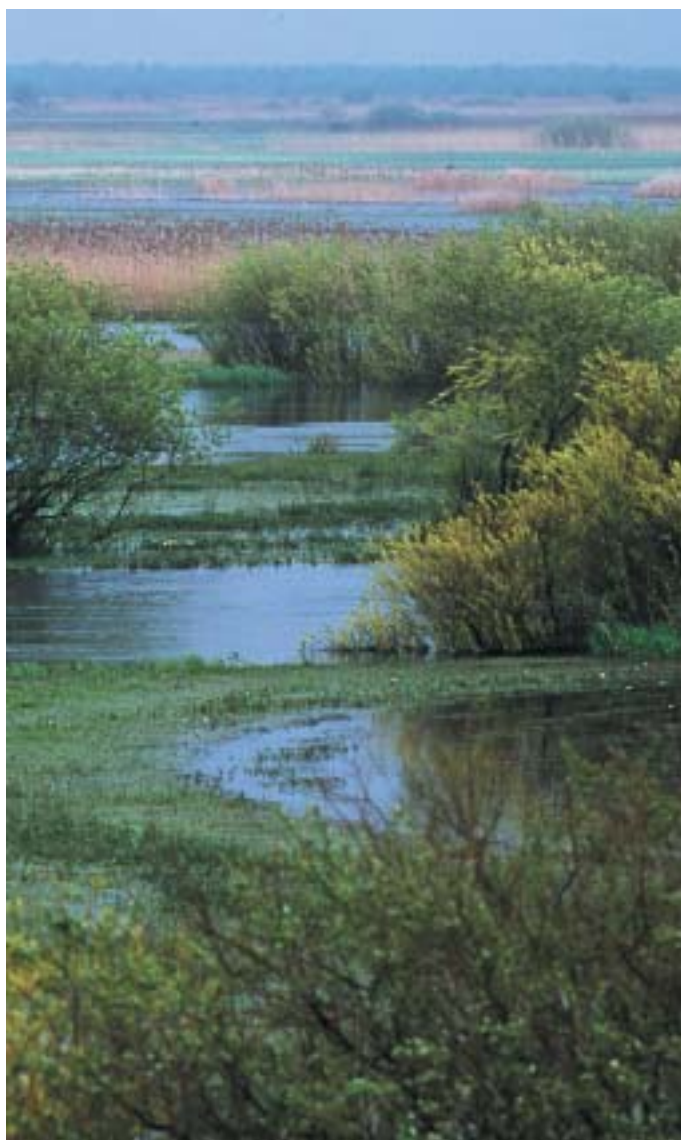
Sergey Moroz  
Programme Officer

Tel.: +33 1 44 64 40 43  
Fax: +33 1 55 25 84 74  
E-mail: smoroz@wwf.fr



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November 2003

# *Table of contents*

<b>EXECUTIVE SUMMARY</b> .....	i
<b>Chapter 1: Introduction</b> .....	1
BACKGROUND OF THE WATER AND WETLAND INDEX.....	1
METHODOLOGY .....	2
<b>Chapter 2: Application of Integrated River Basin     Management Principles</b> .....	5
2.1. PUBLIC PARTICIPATION .....	7
2.2 INTEGRATED MANAGEMENT OF WATER RESOURCES .....	13
2.3 WETLANDS MANAGEMENT .....	19
<b>Chapter 3: Responding to Key Pressures and Impacts on     freshwater ecosystems</b> .....	25
3.1 WATER QUANTITY AND AGRICULTURE .....	30
3.2 WATER QUANTITY AND HOUSEHOLD .....	33
3.3 WATER QUANTITY AND INDUSTRY .....	36
3.4 WATER QUALITY AND AGRICULTURE .....	38
3.5 WATER QUALITY AND HOUSEHOLD .....	42
3.6 WATER QUALITY AND INDUSTRY .....	44
3.7 RIVER FRAGMENTATION AND DAMS .....	46
3.8 RIVER FRAGMENTATION AND FLOOD DEFENCE .....	50
<b>Chapter 4: River Basin Survey</b> .....	54
<b>Annex: List of contacts</b> .....	57

## *Executive Summary*

WWF's Water and Wetland Index is a two-phase pan-European initiative aimed at stimulating debate on how to preserve and improve the state of freshwater ecosystems across Europe through sustainable and integrated management of water.

The first phase (WWI-1) was carried out in 2000 and assessed how effectively 16 EU Member States and Accession Countries monitored the state of their water and how far they were from the "good ecological status" objective to be delivered by 2015, according to the EU Water Framework Directive.

At the end of 2002, WWF began the second phase of the Index (WWI, reported here), which assessed policy and legislative responses by Governments and water authorities to the impacts and pressures on freshwater ecosystems.

WWI was carried out in 22 EU Member States, EU Accession Countries and non-EU countries: Austria, Belgium (Flanders, Wallonia), Bulgaria, Croatia, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Morocco, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Tunisia, Turkey and United Kingdom (England and Wales, Northern Ireland, Scotland). The results reported here refer to 20 countries (23 regions), while findings for Morocco and Tunisia will be presented separately.

The study was carried out using questionnaires, which systematically assessed some significant aspects of water policy at a national level and at the river basin district level.

Three aspects of water policy and legislation have been evaluated:

- 1– The application of integrated river basin management (IRBM) principles
- 2– The application of measures tackling the most urgent freshwater problems in each country (water quantity problems, water quality problems and river fragmentation).
- 3– For EU Member States and Accession Countries, progress towards the transposition and implementation of the Water Framework Directive (WFD).

The survey was carried out by WWF National Offices, partner NGOs and independent consultants. Numerous sectors were consulted during the completion of the questionnaires. These included water companies, NGO stakeholders, governments and their executive agencies and research institutes.

Detailed results of the project are described in this Final Report. The following pages summarise the main findings and formulate recommendations. Results of the assessment of the progress towards the transposition and implementation of the WFD (issue 3 above), are reported in a separate paper (WWF's Water and Wetland Index - Summary of Water Framework Directive results, June 2003), available at [http://www.panda.org/downloads/europe/wwiwdresults\\_dcm4.pdf](http://www.panda.org/downloads/europe/wwiwdresults_dcm4.pdf), together with a brief update of the situation as of 30 September 2003.

## *Conclusions and Recommendations*

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### PUBLIC PARTICIPATION

#### *Main findings*

**A long way to go in public participation.** Public participation in water management was found to be poor or very poor in almost half of the surveyed countries, especially in Southern and Eastern Europe. The most critical aspects of public participation are the lack of proactive information provisions to non-governmental stakeholders (poor or very poor in 35% of the surveyed countries) and the quality of the means to enable the active involvement of interested parties in decision-making processes (poor or very poor in more than 45% of the countries).

*page 9*

**The 'public' is not 'capacitated' enough to participate.** Non-governmental stakeholders often lack specialist knowledge and/or human capacity to truly get involved in decision-making for water management measures. In less than 60% of the countries there is some type of financial support – mainly reimbursement of travel expenses – for stakeholders and in only two countries (Flanders and England/Wales) work time is paid at least in some cases.

*page 11*

**Public participation is not always as timely as hoped for.** It is difficult for non-governmental water stakeholders to contribute and influence the decision-making process because the issuing of consultation documents and the participation of 'interested parties' often take place only towards the end of the process.

*page 10*

**Low transparency for specific projects.** Provisions for formal proactive information to non-governmental stakeholders in relation to specific water management projects (e.g. construction of new water infrastructures) is sufficient in less than 40% of the countries surveyed.

*page 9*

### ***Recommendations***

Governments and water management organisations should:

Improve the arrangements for public participation in decision-making processes related to water management, **increasing the quality and quantity of opportunities for the public and non-governmental stakeholders to be informed and consulted.**

Work on **‘capacitating’ water stakeholders and the public**, through timely and effective provision of information as well as, training and financial support for their active participation in decision-making processes.

Involve non-governmental stakeholders not only in the very final stages of decision-making processes, but also when discussing **interim proposals and drafts.**

Increase the transparency of public consultation processes, systematically informing on **how the comments to documents and proposals were used** in modifying the final decisions.

## INTEGRATED MANAGEMENT OF WATER RESOURCES

### ***Main findings***

**Too many actors for water management.** In none of the surveyed countries the co-ordination of authorities managing the different types of water bodies (ground water, surface water, coastal waters, etc.) was considered as fully adequate. The jurisdiction over water is very fragmented and not even the existence of an ‘umbrella’ institution ensures good coordination between the different managing agencies.

*page 15*

**Almost non-existent integration of sector policies.** In only three out of 23 surveyed regions/countries the integration of water management with other sector policies (e.g. land use planning, agriculture, etc.) was

considered as adequate. This means that very often sectoral strategies and plans are not attuned with water management policies.

*page 16*

**International agreements: quite a positive picture.** All the surveyed countries except for Latvia and Scotland have signed some formal agreements with neighbouring countries for the management of at least part of their transboundary rivers and in 15 out of 23 countries the existing co-operation was judged as adequate or fully adequate.

*page 16*

**Biodiversity in transboundary agreements: a neglected issue.** Aspects related to biodiversity protection as well as compatibility and sharing of biodiversity data are mentioned in less than 50% of the examined agreements for transboundary river basins.

*page 16*

## ***Recommendations***

Governments and water management organisations should:

Create **mechanisms and cross-cutting committees** to improve communication and collaboration between the different actors in the Administration that have jurisdiction over water.

Multiply efforts to improve on **the integration of water policy with other sector policies**, especially with land use planning. This should be done through focused communication between responsible bodies and through laws or legally-binding strategies and plans.

Improve on the **biodiversity content of international agreements** dealing with water resources.

## WETLAND MANAGEMENT

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### ***Main findings***

**Wetlands are still confined to the ‘nature conservation’ box.** In 90% of the surveyed countries the integration of wetlands into water management was judged as inadequate. Wetland management is considered a ‘nature conservation’ issue. This leads to uncoordinated actions in managing wetlands and missed opportunities for fully

exploiting their positive role in water management (e.g. for flood management, for water pollution abatement, etc.).

*page 21*

**Isolated initiatives attempt to protect European wetlands.** Mainly thanks to the existence of case-by-case actions (e.g. a local community promoting the protection of an endangered wetland) and international frameworks (e.g. Ramsar Convention, Natura 2000), in more than 60% of the surveyed regions/countries wetland protection policy was found as quite adequate.

*page 22*

**European countries fail wetland restoration.** National wetland restoration policies are almost non-existent, and restoration actions are isolated and unco-ordinated: only four countries out of 23 have some kind of national restoration strategy and no country except for Switzerland has a comprehensive inventory of wetlands that need to be restored.

*page 23*

### ***Recommendations***

Governments and water management organisations should:

**Include wetlands in water management** strategies and plans, taking into account their positive role in the achievement of good ecological and chemical status of surface and groundwater.

Define overarching **wetland protection and restoration strategies** that are legally-binding and enable the prioritisation of wetland conservation actions.

## WATER QUANTITY PROBLEMS

### ***Main findings***

**Inadequate approach to water quantity problems due to agriculture and household demands.** The current approach was judged as inadequate in 90% of the countries for agriculture and in 64% of the countries for household, because too often policies are still focused on increasing water availability only and not on managing and limiting the existing demand.

*page 28, 30, 33*

**A fairly complete ‘arsenal’ of laws, but better enforcement is needed.**

On paper, the existing legal tools to resolve water quantity problems were considered quite adequate in most of the countries, but their real implementation on the ground is not as effective as required for a “wise” use of water.

*page 28*

**Insufficient economic and financial incentives.** In the majority of the surveyed countries, the existing economic instruments such as water pricing and subsidies were considered ineffective to address water quantity problems.

*page 29, 30, 33*

**Water quantity and agriculture: uncontrolled use of water.** The law requires farmers to measure water consumption in only 60% of the surveyed countries, and even the existence of this obligation doesn’t ensure a real control of how much water is used and by whom.

*page 31*

## ***Recommendations***

Governments and water management organisations should:

Work on reducing water consumption by **managing water demand** and improving **water use efficiency**, instead of simply increasing water availability to meet increasing water needs.

Improve the **enforcement of legislation**, especially in agriculture. This means increasing the capacity of the Administration to control the implementation of the relevant laws and to ensure the effective prosecution of frauds.

**Raise consumer’s awareness** of the environmental damage caused by water wastage, teach simple and effective practices that can reduce water consumption and provide water users with **financial support to install water-saving systems**.

Remove hidden subsidies on water used by agriculture, by **charging farmers on the basis of the consumed water volumes** (and not for irrigated areas) and by including realistic **environmental costs in water pricing**.

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## WATER QUALITY PROBLEMS

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### *Main findings*

**Inadequate approach to managing water quality problems due to agriculture.** In more than 60% of the countries the approach to agricultural pollution is unsatisfactory: the applied solutions are still not able to effectively deal with diffuse pollution or with the negative impact on the environment of intensive farming.

*page 39*

**Sufficient laws, but poor enforcement.** In the majority of the surveyed countries the existing legal tools to fight water quality problems were judged positively. However, law enforcement on the ground needs to be improved.

*page 40*

**Diffuse pollution: a combined approach is needed.** To fight diffuse pollution economic incentives are needed to encourage and support changes in the water users' behaviour, but the existing economic tools for agriculture and households were judged as adequate in less than 30% of the countries.

*page 40*

**Water quality and household: still not enough attention paid to the source of the problem.** The existing measures are mainly focused on increasing and improving the wastewater treatment infrastructure, and disregard initiatives such as education and financial incentives to reduce pollution at the household level. Less than 30% of the surveyed countries have adequate economic and information tools addressed to households.

*page 43*

### *Recommendations*

Governments and water management organisations should:

Design **measures other than legal regulations** to tackle diffuse pollution problems due to agriculture. In some cases, this includes drastically **reducing unsustainable, intensive farming**.

Always apply **cross-compliance to subsidies**, to avoid public subsidies being given to polluters or agricultural production aids having a negative impact on the environment.

In EU countries, increase the extent of **Nitrate Vulnerable Zones (NVZs)** - or apply stricter measures outside these zones - and ensure

better law enforcement in the existing NVZs.

**Raise consumer's awareness** of the environmental damage caused by unwise use of water and teach simple and effective practices that can reduce the volume and polluting charge of waste water  
Provide water users with **financial support to install less polluting technologies and systems.**

Revise **taxes and fees on emissions of pollutants by industry**, to make sure that they **are high enough** just to represent a real incentive to pollute less.

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## RIVER FRAGMENTATION DUE TO INFRASTRUCTURE

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### *Main findings*

**Dams: insufficient measures for improving 'old' dams.** There are too few regulations to minimise the negative environmental impact of existing dams (e.g. construction of fish ladders or passes, maintenance of ecological flow in rivers, hydro-peaking, bed-load management, etc.), and even when they exist, their enforcement on the ground is very poor.

*page 47*

**A slow shift towards more sustainable flood management.** Action plans and/or sets of measures for flood defence include alternative measures to man-made infrastructures. Restrictions on land use in floodplains are mentioned in more than 80% of the regions/countries, while the protection and restoration of floodplains and the establishment of washlands along the rivers are mentioned in more than 60% of cases. However, at present this positive shift can be seen only 'on paper', and still needs to be brought into practice 'on the ground'.

*page 50*

**Flood defence: poor assessment of the effectiveness of existing measures.** Only one third of the surveyed countries have some kind of mechanism to assess in a 'systematic' way the effectiveness of existing flood-defence measures.

*page 52*

## ***Recommendations***

Governments and water management organisations should:

Improve regulations aimed at reducing the **negative environmental impacts of existing dams** and establish more inspections to control their real enforcement on the ground.

**Recognise and correctly quantify the environmental cost** of dams.

Enable **public participation** during the whole cycle of dam construction. This means to involve stakeholders and local communities in the analysis of the needs to be met through the dam and discuss all the possible alternatives, including not constructing it.

**Implement non-structural flood-defence measures** that are put forward in strategies and plans. This implies drastically improving the coordination between flood-defence and land use policies.

**Critically assess the effectiveness of existing flood-defence measures**, taking into account their real capacity to avoid damage, as well as the economic and environmental effectiveness of investments. This assessment should lead to an upgrade of flood-protection policies.

**Educate society** and change the population's belief that man-made infrastructures make towns 100% flood-safe.



# *Chapter 1: Introduction*

## *1.1 Background of the Water and Wetland Index*

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WWF's Water and Wetland Index (WWI) is a two-phase pan-European initiative aimed at stimulating debate on how to preserve and improve the state of freshwater ecosystems across Europe through the sustainable and integrated management of water.

The first phase<sup>1</sup> (WWI-1) was carried out in 2000 and assessed how effectively 16 EU Member States and Accession Countries monitored the state of their water and how far they were from the "good ecological status" objective to be delivered by 2015, according to the EU Water Framework Directive. The WWI-1 results showed that European waters were affected by severe problems and that countries had to start acting immediately, improving on their monitoring and management of freshwater ecosystems.

At the end of 2002, eighteen months after the launch of the WWI-1 results, WWF began the second phase of the Index (reported here), which assessed policy and legislative responses by Government and water authorities to the pressures and impacts on freshwater ecosystems.

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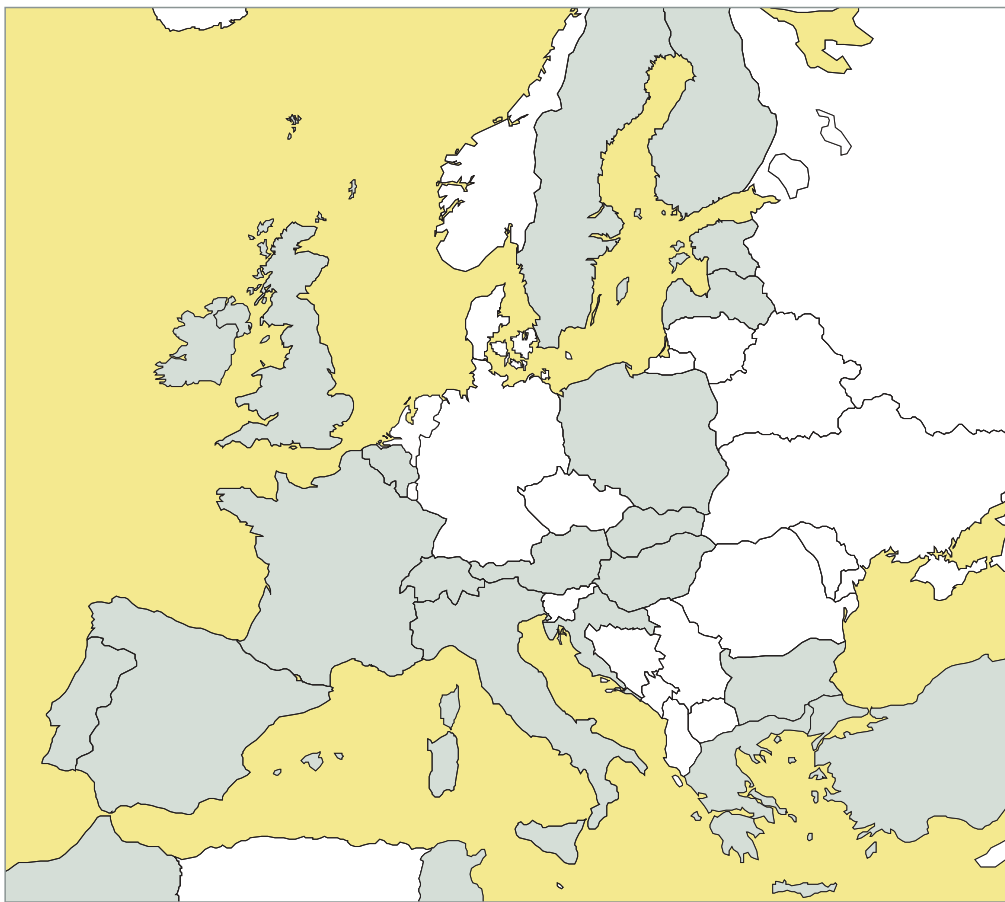
<sup>1</sup> For more information about WWI-1 results, please visit <http://www.panda.org/freshwater/europe>

## 1.2 Methodology

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The methodology of the second phase of the Water and Wetland Index was developed by a Working Group composed of members from WWF offices and partner organisations in the surveyed countries (see below).

During the definition of the WWI, the Working Group consulted for advice officials from the European Environment Agency, the European Commission Directorate General for the Environment, as well as public and private water experts in the relevant countries.



**Figure 1.1:** Map showing in grey the countries involved in the Water and Wetland Index analysis (phase 2).

The WWI survey was carried out using a questionnaire, completed by WWF National Organisations, partner NGOs<sup>2</sup> and independent consultants in 22 countries, including EU Member States, Accession Countries and other non-EU countries (figure 1.1). These were: Austria, Belgium, Bulgaria, Croatia,

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<sup>2</sup> Voice of Irish Concern for the Environment (VOICE, Ireland), Liga para a Protecção da Natureza (LPN, Portugal), Centre for Environmental Information & Education (CEIE, Bulgaria), ZEUS (Croatia), and Estonian Fund for Nature (EFN, Estonia).

Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Morocco, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Tunisia, Turkey and the United Kingdom. Due to their specific legal autonomy, in Belgium the assessment was done separately for the Flemish and Walloon regions; in the UK for England/Wales, Scotland and Northern Ireland. Moreover, the results of the scoring exercise in Tunisia and Morocco will be reported separately to the European results. Therefore, the total number of surveyed countries considered in the present report adds up to 23 countries/regions.

The organisations in charge of the national scoring had a Working Document with detailed guidelines on how to score each of the indicators assessed in the Index and were requested to support each score with explanatory comments. WWF's Living Waters Programme - Europe was in charge of the overall coordination.

The analysis and the corresponding results are based on the information available to the public up until August 2003, as well as on interviews and written consultation with governmental and non-governmental water stakeholders. During the scoring exercise, more than 270 individual stakeholders were consulted in the 23 countries/regions involved in the survey. These included water companies, non-governmental organisations, governments, executive agencies, local and regional authorities and research institutes.

When designing the questionnaire, special emphasis was given to activities and results that are reported in written public documents, which are unquestionable evidence of formal on-going or completed processes. Moreover, the WWF National Organisations, partner NGOs and consultants who completed the questionnaire were requested to 'judge' the real implementation and adequacy of 'formal' arrangements, taking into account both published information and the views of other consulted water stakeholders. This led to classifying formal arrangements into:

- 'Fully or almost fully adequate' ('very good' or 'good')
- 'Adequate although there are significant aspects that should be improved upon' ('quite adequate' or 'fair')
- 'Adequate only in a few aspects' ('poor') and
- 'Inadequate' ('inadequate' or 'very poor')

The survey assessed significant aspects of existing water policy at a national level and in 15 river basins or national portions of a transboundary river basin. This is because the Index wished not only to assess the overall situation in the country, but also in the 'natural' managing scale of waters - river basins - as reflected in and requested by the EU Water Framework Directive.

As for the content, the WWI survey considered the following issues:

1. The application of integrated river basin management (IRBM) principles
2. The application of measures tackling the most urgent freshwater problems in each country (water quantity problems, water quality problems and river fragmentation).
3. For EU Member States and Accession Countries, the progress towards the transposition and implementation of the Water Framework Directive (WFD)

The next chapters present the findings related to the application of IRBM principles and to the application of measures to alleviate water problems.

The results of the study in relation to the progress in the transposition and implementation of the WFD (point 3 above) were released in July 2003 – six months before the deadline for the transposition of the Directive – to contribute in a timely manner to the work undertaken by Member States and Accession Countries. These results are reported in a separate paper (WWF's Water and Wetland Index - Summary of Water Framework Directive results, June 2003), available at [http://www.panda.org/downloads/europe/wwiwdresults\\_dcm4.pdf](http://www.panda.org/downloads/europe/wwiwdresults_dcm4.pdf), together with a brief update of the situation as of 30 September 2003.

Key conclusions about each country and specific river basins are reported in separate fact sheets that can be found in a separate folder distributed together with this report.

The WWI project wishes to stimulate debate on the policy and pressures on freshwater across Europe. However, the views expressed here do not necessarily reflect the opinion of all the organisations that have been consulted during the project. The survey considered countries having very different political, economic, cultural and historical backgrounds and assessed them against high standards set by European Union legislation and international agreements and Conventions. Hence this report should be read taking into account these differences among countries. **For this reason, the conclusions of the survey, while identifying gaps where further improvement is needed, are by no means aimed at discrediting or dismissing the positive achievements of countries in relation to water management.**

## *Chapter 2: Application of Integrated River Basin Management Principles*

Since the Dublin Conference on Water and Environment and the Rio 'Earth Summit' in 1992, the mutual dependence of environment and development has been widely recognised. Integrated approaches to the management of natural resources are now firmly in the mainstream of policy making.

In relation to the freshwater environment, the concept of Integrated River Basin Management (IRBM) has been discussed during the last few years in scientific, environmental and decision-making circles as a means to achieve improved and sustainable management of water resources. IRBM is a process of coordinating conservation, management, development and use of water, land and related resources across sectors within a given river basin, in order to maximise the economic and social benefits derived from water resources in an equitable manner while maintaining and, where necessary, restoring freshwater ecosystems<sup>3</sup>.

A critical element of IRBM is the integration of land- and water-use planning/management at the river basin level. IRBM is a long-term process through which people can develop a vision, agree on shared values and behaviour, make informed decisions and act together to manage the natural resources of a river basin.

In the WWI survey, it was decided to assess the level of application of this water management 'model' using some key principles that were identified during the 'Water Seminar Series'<sup>4</sup>, three workshops organised by WWF and the European Commission in 2000-2001. In the Seminars, more than 300 individual water stakeholders identified five general cross-cutting principles that should be applied for an effective implementation of Integrated River Basin Management: Timing, Participation, Capacity, Integration and Scale.

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<sup>3</sup> Based on a definition adopted by the Global Water Partnership (<http://www.wwfp.org>)

<sup>4</sup> For more information about the Water Seminars Series, please download "Elements of Good Practice in Integrated River Basin Management. A Practical Resource for Implementing the Water Framework Directive" from <http://www.panda.org/downloads/europe/wfdpracticalresourcedocumentenglish.pdf>

The WWI considered two of these cross-cutting principles: Participation and Integration. The reason for this selection is that these are priority issues for WWF and key principles for a successful implementation of the EU Water Framework Directive, which is a legally-binding law for most of the countries involved in the survey:

**Public Participation** is “the process of ensuring that those who have an interest or a stake in a decision are involved in making that decision”<sup>5</sup>. This principle is one of the major challenges of the EU Water Framework Directive (WFD), which, in its Article 14, establishes that “Member States shall encourage the active involvement of all interested parties in the implementation of this Directive”. The parameters assessed in relation to this issue were: proactive information provision, public consultation and active involvement.

**Integration** means coordination among bodies involved in water management; cooperation between water managers and other sectors; linkage of surface and ground water management, linkage of inland and coastal waters, and cooperation between countries sharing the management of transboundary rivers. This principle is key for the good implementation of the WFD, which stresses in several points of its text the need for e.g. “integration of protection and sustainable management of water into other Community policy areas such as energy, transport, agriculture, fisheries, regional policy and tourism.” The WWI assessed international cooperation for the management of transboundary rivers and the level of integration in water policy.

The WWI also assessed the role of **wetlands**<sup>6</sup> in water management since WWF considers wetland ecosystems as an essential component of water management, despite the fact that wetlands are often disregarded as a “nature conservation issue”.

The significant role of wetlands is also recognised in the Horizontal Guidance on Wetlands prepared in the framework of the European Union Common Implementation Strategy for the WFD. This states that “Wetland ecosystems are ecologically and functionally significant elements of the water environment, with potentially an important role to play in helping to achieve sustainable river basin management.(...) In particular, wetlands can help to: abate pollution impacts, contribute to mitigating the effects of droughts and floods, help to achieve sustainable coastal management and to promote groundwater re-charge”.

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<sup>5</sup> WWF's Preliminary comments on Public Participation in the context of the Water Framework Directive and Integrated River Basin Management, April 2001.

<sup>6</sup> Wetlands are defined as: “heterogeneous but distinctive ecosystems in which special ecological, biogeochemical and hydrological functions arise from the dominance and particular sources, chemistry and periodicity of inundation or saturation by water. They occur in a wide range of landscapes and may support permanent shallow (<2m) or temporary standing water. They have soils, substrates and biota adapted to flooding and/or water-logging and associated conditions of restricted aeration’ Definition provided by the EC-cofunded research project Evaluwet.

In relation to wetlands, the Water and Wetland Index assessed the following issues: the role of wetlands in water management, wetland protection policy and wetland restoration policy.

## 2.1. Public Participation

The Water and Wetland Index analysed three aspects of public participation in relation to water management decision-making processes: proactive information provision, public consultation and active involvement of non-governmental water stakeholders<sup>7</sup> (box 2.1). This meant assessing issues such as: the organisation by the authorities of events to inform stakeholders and foster their involvement, the existence of established procedures to access available documents and the characteristics of the provisions for sending out draft legal documents for comments, etc.

From this analysis, the survey obtained a picture of the existing arrangements for formal public participation.

### Box 2.1 - Three key ingredients of Public Participation

**‘Pro-active information’** refers to information about legislation, the planning process and specific projects affecting freshwater ecosystems, including results of ecological, economic or other analyses, proposed actions, measures, strategies and plans, debates over key issues etc. Pro-active provision of information can take a variety of forms including, for example, the publication of leaflets or brochures, letters informing specific stakeholders about key issues, web-based information provision etc.

**‘Public consultation’** means requesting comments and feedback from any interested party on a published document or proposal (e.g. a timetable, a draft policy, work programme).

**‘Active involvement’** implies that those involved have a genuine and early opportunity to influence the decision-making process. It is a dynamic, interactive process that relies on building trust and confidence that public/stakeholder views will be accommodated and have a real influence on the development of legislation, policies, plans and projects.

Moreover, WWF, partner NGOs and other water stakeholders evaluated the adequacy of these formal provisions based on parameters such as: the timeliness of the information provisions and the suitability of the language used to reach the final recipients; the real chance for interested parties to

<sup>7</sup> In the survey, ‘non-governmental stakeholders’ were defined as non-governmental organisations that represent the following interested parties: industry (including power generation, water supply companies, agriculture (including livestock), environmental NGOs, and the research/academic sector.

influence the decision-making process with their comments; the rules governing existing participatory processes and their capacity to enable a real exchange of opinions and advice.

The table below (table 2.1) summarises the results of this analysis, merging into one ‘score’ the existence of provisions for ‘formal’ public participation and the evaluation of their adequacy based on the opinion of WWF, partner NGOs and other water stakeholders.

Summary table

**Table 2.1 Overview of the countries’ performance in relation to information provisions, public consultation and active involvement in water management decision-making processes**

Public participation in water management									
	Information provisions	Public Consultation	Active Involvement	Total score		Information provisions	Public Consultation	Active Involvement	Total score
B-Flanders	😊😊	😊😊	😊	5	Hungary	😊	😞	😞	-1
Switzerland	😊😊	😊😊	😊	5	Portugal	😞😞	😊	😊	-2
Finland	😊😊	😊	😊	4	Greece	😊	😞	😞😞	-3
France	😊	😊😊	😊	4	Ireland	😊	😞	😞😞	-3
Sweden	😊	😊	😊	2	Poland	😊	😞	😞😞	-3
UK-Engl &Wales	😊	😊	😊	2	Slovakia	😊	😞	😞😞	-3
B-Wallonia	😊	😊	😊	1	Croatia	😞	😞	😞😞	-4
UK-Scotland	😊	😊	😊	1	Italy	😞😞	😞	😞😞	-5
Austria	😊	😊	😞	0	Spain	😞😞	😞	😞😞	-5
Bulgaria	😊	😊	😊	0	Turkey	😞😞	😞	😞😞	-5
Estonia	😊	😊	😊	0	Latvia	😞😞	😞😞	😞😞	-6
UK-N Ireland	😞	😊	😊	0					

Performance assessment obtained taking into account the existence of formal arrangements and the opinion of WWF, partner NGOs and other water stakeholders. Countries are listed in descending order, while countries with the same score are listed in alphabetical order. Key: 😊😊=Very good (+2); 😊=Good (+1); 😊= Fair (0); 😞= Poor (-1); 😞😞= Very poor (-2).

### *Main specific findings*

**A long way to go for public participation in water management.** Public participation in water management was found to be poor or very poor in almost half of the surveyed countries, especially in Southern and Eastern Europe. The poorest aspects of public participation are the lack of proactive information provisions to non-governmental stakeholders (poor or very poor<sup>8</sup> in 35% of the surveyed countries) and the quality of the means to enable the active involvement of interested parties in decision-making processes (poor or very poor in more than 45% of the countries).

It is important to note that even in some countries where the overall assessment in table 2.1 is quite positive, public participation still needs to be improved upon. Indeed, in countries such as Ireland, UK-Northern Ireland and UK-Scotland, a number of arrangements to ensure formal public participation are in place, but the ‘content’ of existing participatory instruments was judged as inadequate.

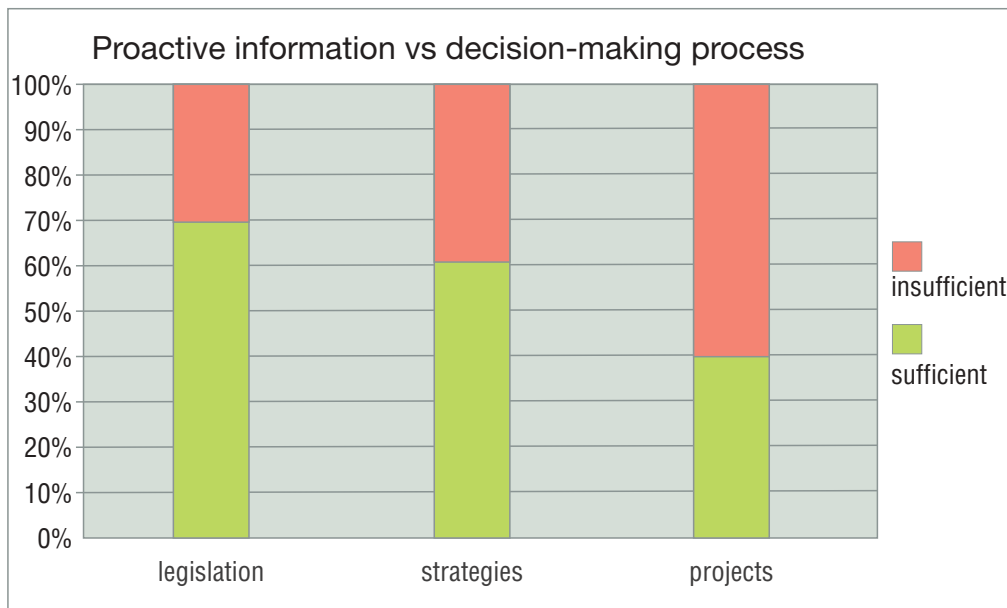
In general, there is a need to improve on the “digestibility” of the information provided. It was found that sometimes information is too technical to be understood by some of the interested parties (Bulgaria, UK-England/Wales), or that the material available is so voluminous or unorganised that it discourages continued involvement and consultation (B-Flanders, Ireland, UK-Scotland).

Another example is the access to background documents (e.g. scientific/technical reports, notes of meetings draft plans/strategies, etc.). In theory, they are available in most cases, but in practice in some of the surveyed countries (Bulgaria, Greece, Portugal, Spain) bureaucracy or administrative obstacles make this access so difficult and time-consuming as to discourage citizens and organisations from filing access requests.

**Specific projects need more transparency.** The WWI analysis has found that the less transparent decision-making processes are those related to the definition and approval of specific water management projects (e.g. construction of infrastructures).

Formal arrangements for proactive information of water stakeholders in relation to specific projects reach a sufficient level of adequacy in less than 40% of the countries, while information procedures for legislation and strategies/programmes on freshwater management are formally sufficient in 69% and 60% of the countries respectively (figure 2.2).

<sup>8</sup> total score lower than 0 in table 2.1



**Figure 2.2:** Proactive information to non-governmental water stakeholders in decision making-processes linked to legislation, strategies and projects. The level of proactive information is expressed as a percentage of the number of countries where the arrangements for formal information are sufficient. Analysis based on the number of countries where interested non-governmental stakeholders are proactively informed in “all or almost all the cases” or “in most of the cases”.

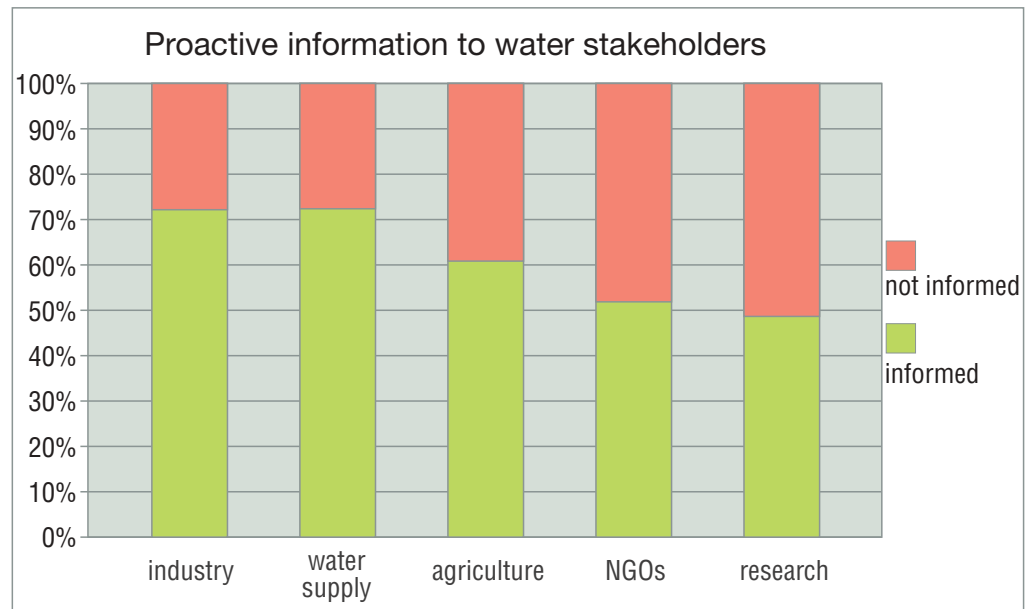
**Public Consultation: Do Governments use stakeholders’ comments at all?**

In 60% of the surveyed countries, when documents are submitted to public consultation, responses from consultees and the outcome of the consultation exercises are published only in isolated cases or never, before any subsequent change in the legislation, strategy or project. This makes stakeholders less confident of the effectiveness of their participation. The publication of the outcomes is normal practice in: B-Flanders, Estonia, France, Ireland, Sweden, Switzerland and UK.

**Public Participation: Not always as timely as hoped for.** In all the countries, WWF National Organisations and partner NGOs have asked for earlier involvement in water management processes. Indeed, when documents are issued for consultation it is often only at the end of the decision-making process (Austria, Greece, Latvia, Portugal, Slovakia, Spain, UK-England/Wales) and this makes it very difficult to truly participate and influence it. Moreover, in several countries (Austria, Greece, Hungary, Italy, Portugal, Spain) while consultation on final documents and projects is clearly regulated, consultation on drafts, which is not compulsory, is often irregular.

**Restricted access to information for environmental NGOs.** Regarding access to information and to “active involvement” processes, the survey has shown (figure 2.3) that the participation of economic sectors (industry, water supply and agriculture) is sought more proactively (in about 70% of the countries) than that of environmental NGOs or academic sectors (about 50%). Indeed, while economic sectors are informed mainly for lobbying reasons or because they are closely linked to the Public Administration (e.g. some water

supply companies or hydropower industries), in many countries (Austria, Croatia, Slovakia, Spain, Poland, Portugal), the so-perceived ‘conflictive’ sectors like environmental NGOs or local citizens are generally informed only following strictly legal obligations.



**Figure 2.3:** Proactive information to different groups of water stakeholders, expressed as a percentage of the number of countries where they are proactively informed. Analysis based on the number of countries where specific non-governmental stakeholder sectors are pro-actively informed in “all or almost all the cases” or “in most of the cases”.

The above is even more evident when considering that arrangements for formal active involvement of non-governmental water stakeholders in decision-making processes exist in less than 50% of the surveyed countries only.

As for scientists, in a number of countries (B-Flanders, Bulgaria, Estonia, Greece, Portugal, Slovakia, UK-England/Wales, UK-Scotland) academics and technicians are often active partners of the Government as contracted technical advisors, and not as independent stakeholders that have a say in decision-making processes.

**The public needs to be ‘capacitated’ to participate.** The WWI survey has shown that a big bottleneck for effective public participation in water management is still the limited capacity of the “public” that should participate. Governments have signed and ratified the Aarhus Convention and Article 14 of the Water Framework Directive that requires the fostering of active involvement in freshwater management. But arrangements for formal public participation tend to be less than helpful when the interested parties lack either specialist knowledge or human capacity to truly get involved in decision-making.

For instance, in a number of countries (Croatia, Finland, France, Greece, Ireland, Switzerland, UK-Northern Ireland, UK-Scotland, Northern Ireland) the survey highlighted that environmental NGOs are often overloaded with work related to participation in consultation processes and, due to their limited financial and human resources, they are obliged to prioritise which processes they can participate in, and can't always ensure continuous involvement in the chosen process.

In less than 60% of the surveyed countries there is some type of financial support for non-governmental stakeholders attending participatory events related to freshwater management. Furthermore, this is not the general rule and applies to travel expenses only, while "work time" is not paid. A positive exception to this rule is in Belgium-Flanders and, in very isolated cases, UK-England/Wales.

**Table 2.3 Financial support for non-governmental stakeholders involved in participatory processes**

Surveyed country	Some expenses (e.g. travel)	Work time
Austria		
B-Flanders	●	●
B-Wallonia	●	
Bulgaria	●	
Croatia		
Estonia	●	
Finland	●	
France	●	
Greece		
Hungary	●	
Ireland		
Italy		
Latvia		
Poland	●	
Portugal	●	
Slovakia		
Spain		
Sweden	●	
Switzerland		
Turkey	●	
UK-Engl/Wales	●	●
UK- N-Ireland	●	
UK-Scotland		

Countries that in specific cases provide non-governmental stakeholders that wish to take part in participatory processes with some type of financial support. In the case of England/Wales, the payment of working time happens only in very rare occasions. Contracting of scientists by the Public Authorities to give technical advice is not included.

## *2.2 Integrated management of water resources*

Water on the planet moves in a never-ending cycle - the water cycle -, which ignores the existence of administrative boundaries and the formal nomenclature that distinguishes between surface and ground waters, inland and coastal waters, rivers, wetlands and lakes. At the same time, water resources are an essential and irreplaceable element for the health of natural environments and the development of human and economic activities.

Sustainable use of water can be achieved only through integrated management of water resources, which means coordination among all the bodies involved in water management, cooperation between water managers and other sectors, the linkage of surface and ground water management, the linkage of the management of inland and coastal waters, and cooperation between countries managing transboundary rivers.



Diversion point of the Danube to the canal. The old river bed is in the foreground. Slovakia.

The Water and Wetland Index looked at the arrangements enabling this integration in the surveyed countries and considered issues such as the existence and competencies of a single commission/board for the management of the different types of waters (surface, groundwaters, coastal waters, etc.), and the existence and content of a national strategy or plan on freshwater management, which analyses and balances the needs of the different sectors depending on water (e.g. industry, environment, agriculture, etc).

At the same time, this integration was assessed based on aspects such as: the power of the integrating board/body and the real effectiveness of its integrated strategy on water management practices, the rigorousness of the water needs analysis, the equitability of the distribution of water among the different water-demanding sectors, etc.

The table below (table 2.4) summarises the results of this analysis, merging into one 'score' the existence of formal means to achieve an integrated management of water resources and the evaluation of the adequacy of these means based on the opinion of WWF, partner NGOs and other water stakeholders.

Summary table

**Table 2.4 Overview of the countries' performance in relation to water policy integration and international cooperation in the management of transboundary rivers.**

Integrated management of water resources							
	Integrated approach in water policy	International Co-operation	Total score		Integrated approach in water policy	International Co-operation	Total score
Finland	😊😊	😊😊	3	Estonia	😊	😞	-1
Sweden	😊	😊	2	Hungary	😊	😞	-1
Switzerland	😊	😊	2	Ireland	😞😞	😊	-1
France	😊	😊	1	Poland	😞	😊	-1
UK-Engl.&Wales	😞	😊😊	1	UK-N Ireland	😞	😊	-1
Bulgaria	😊	😊	0	B-Wallonia	😞	😞	-2
Portugal	😞	😊	0	Greece	😞😞	😊	-2
Slovakia	😞	😊	0	Italy	😞😞		-2
Spain	😞	😊	0	Latvia	😞	😞😞	-3
Austria	😞	😊	-1	UK-Scotland	😞	😞😞	-3
B-Flanders	😊	😞	-1	Turkey	😞😞	😞😞	-4
Croatia	😞	😊	-1				

Performance assessment obtained taking into account the existence of formal arrangements and the opinion of WWF, partner NGOs and other water stakeholders. Countries are listed in descending order, while countries with the same score are listed in alphabetical order. Key: 😊😊=Very good (+2); 😊=Good (+1); 😊= Fair (0); 😞= Poor(-1); 😞😞= Very poor (-2). In Italy, international cooperation was not assessed.

### *Main specific findings*

**Fragmented jurisdiction leads to poor results.** The Water and Wetland Index analysed the distribution of competencies for different types of water bodies (groundwater, rivers and lakes, floodplains, wetlands, coastal waters) to assess the level of integration of their management. In none of the surveyed countries the coordination among the competent authorities in the management of different types of water bodies was judged as fully adequate.

**Table 2.5 Assessment of the coordination of authorities in the management of different types of water bodies (groundwater, surface water, coastal waters, etc.)**

Surveyed country		Surveyed country	
B-Flanders	😊	Latvia	😞
Bulgaria	😊	Portugal	😞
Finland	😊	Slovakia	😞
France	😊	Spain	😞
Poland	😊	UK-Engl/Wales	😞
Sweden	😊	UK- Northern Ireland	😞
Switzerland	😊	UK-Scotland	😞
Austria	😞	Greece	😞😞
B-Wallonia	😞	Ireland	😞😞
Croatia	😞	Italy	😞😞
Estonia	😞	Turkey	😞😞
Hungary	😞		

Assessment based on the opinion of WWF, partner NGOs and other water stakeholders. Countries are listed in descending order, while countries with the same score are listed in alphabetical order.

Key: 😊=fully adequate or almost fully adequate; 😊= adequate, but there are significant aspects that should be improved upon; 😞= not adequate except for a few aspects; 😞😞= not adequate.

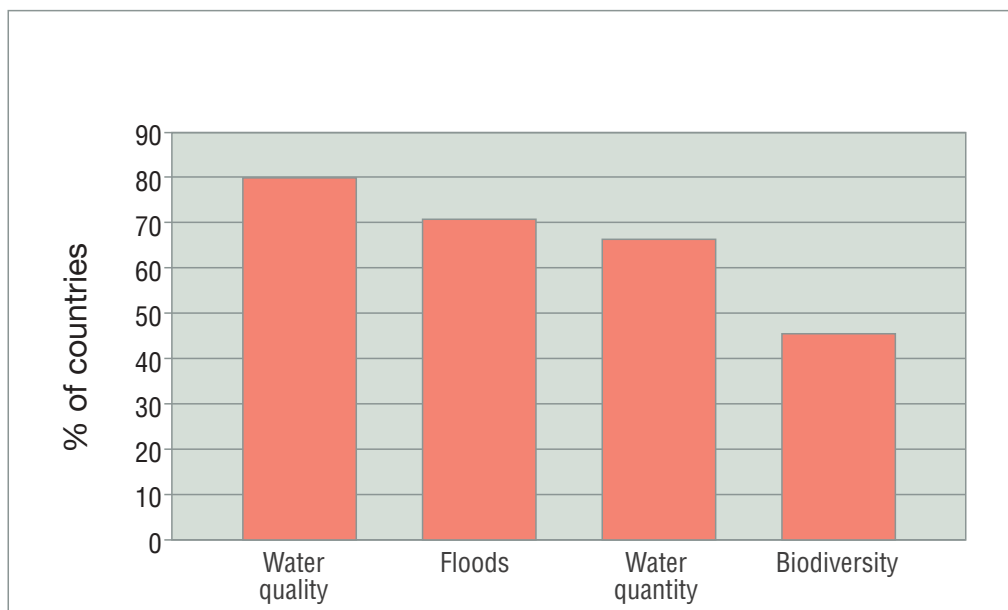
The survey showed that in half of the surveyed countries there is an institution – normally a Ministry – that has the overall responsibility for managing all these types of water bodies, but, in practice, management is shared by a number of agencies or departments. Unfortunately, the existence of an overarching institution does not ensure good coordination or communication between the underlying agencies and the result is quite a fragmented approach to water management. For this reason, there is an urgent need to reduce this fragmentation or, at least, to create mechanisms and cross-cutting committees to improve communication and collaboration among the different actors in the Administration that have jurisdiction over water.

**Integration of sector policies: actions are urgently needed.** The situation is more critical when speaking about the integration of water policy with other sectoral policies: in only three (Finland, Sweden and Switzerland) out of 23 countries/regions the integration of sectors was judged as adequate, while in all the others urgent actions to improve sectoral integration are needed, especially with land use planning.

A positive example in this field is Switzerland and its Federal Law on the Protection of Water (1991), which includes all the different water-consuming sectors, defines measures and timetables, and instructs the implementation. Relevant articles about habitat protection are nearly the same as in the Law on Water Protection and the Law on Flood Control. The Swiss Federal Law on the Protection of Water represents a step forward in the integration of sectors and is delivering good results, although the level of implementation is not homogeneous and equally satisfactory in all the cantons.

**International agreements: quite a positive picture.** The WWI considered the existence and scope of cooperation agreements between national authorities in the field of water management, as well as the tools used to implement such agreements. The resulting overall picture is quite positive. All the surveyed countries except for Latvia and Scotland have signed some formal agreements with neighbouring countries for the management of at least part of their transboundary rivers, and the existing cooperation was considered as adequate or fully adequate in 15 out of 23 countries.

As for the content of the existing cooperation agreements (figure 2.4), the most developed fields are flood control and water quality issues (e.g. data exchange and alert systems in case of polluting accidents). The most neglected ones are



**Figure 2.4.** Percentage of surveyed countries that consider the issues above in their international agreements for the management of transboundary rivers.

those related to biodiversity (e.g. measures for biodiversity protection, compatibility and sharing of monitoring data relevant to biodiversity), as this topic is mentioned in the agreements in less than 50% of the surveyed countries.

**Transboundary River Basin Management Plans: still a long way to go.** Article 13 of the Water Framework Directive establishes that “in the case of an international river basin district falling entirely within the Community, Member States shall ensure coordination with the aim of producing a single international river management plan”. The deadline for the fulfilment of this requirement is 2009 and the survey found that EU Member States and Accession Countries have to make more of an effort for the achievement of this objective, since at present no country, except for England and Wales, has transboundary River Basin Management Plans in place.

Moreover, Article 13 of the WFD requires that “in the case of an international river basin district extending beyond the boundaries of the Community, Member States shall endeavour to produce a single river basin management plan”. The achievement of this objective implies important additional work for countries that are at the border of the enlarged Europe (Bulgaria, Croatia, Greece, Latvia, Poland and Turkey), where the establishment of collaboration agreements with neighbouring countries are often still in the process of being developed.

A very positive and promising attempt to establish such international plans is the River Basin Management Plan for the Danube that is under development in the framework of the Convention for the Protection and Sustainable Use of the Danube River and its joint Action Plan (box 2.2). Another example is the Prespa Park, established in 2000 and lying between Albania, the Former Yugoslav Republic of Macedonia and Greece, aims to promote the sustainable development of the region and, in the long term, to achieve a joint management of the transboundary river basin.

## Box 2.2 Transboundary Cooperation in the Danube River Basin

The Danube is Europe's second largest river, and the most international river basin in the world. From its source in Germany to its magnificent Delta on the Black Sea, the Danube crosses ten countries, and its basin drains lands from seventeen European countries.

The Convention on the Protection and Sustainable Use of the Danube River entered into force in October 1998. In its framework, the Danube countries have committed "*to maintain and improve the environmental and water quality of the Danube and its catchment area, to prevent and mitigate adverse impacts and changes, as well as to reduce nutrient pollution of the Black Sea from sources in the Danube Basin*". Most Danube countries, except for those with very small areas of the Danube basin in their territories, are contracting parties to the Convention: Austria, Bulgaria, Croatia, the Czech Republic, the European Community, Germany, Hungary, Moldova, Romania, Slovakia, Slovenia, Ukraine, and Serbia Montenegro. Bosnia Herzegovina has observer status. The International Commission for the Protection of the Danube River (ICPDR) was established to coordinate the implementation of the Convention.

The Danube countries have committed to implementing the EU Water Framework Directive in the Danube Basin, under the coordination of the ICPDR. In accordance with the Joint Action Programme for the Danube Basin (2001-2005), the ICPDR is coordinating the development of a unified Danube River Basin Management Plan, based on the plans of the riparian states. A number of expert groups under the ICPDR are dealing with different aspects such as information collection, analysis of the characteristics of the Danube Basin, review of the effect of human activities as well as economic analysis of water use at the basin-wide level. The River Basin Management Expert Group is dealing with the implementation of the WFD and the development of a Danube Basin Management Plan. An Ecological Expert Group has been established to deal with the implementation of the ecological issues of the WFD and the protection, restoration and sustainable management of river ecosystems.

Beside government representatives, many non-governmental organizations (NGOs) participate as observers and contribute to the work of the ICPDR and its expert groups. Many of them are organized in the framework of the Danube Environmental Forum (DEF): an umbrella network of Danube NGOs. The ICPDR recently adopted a Strategy for Public Participation in the Danube River Basin Management Plan, with actions on the local, sub-basin, national and international (Danube Basin) levels.

## 2.3 Wetland Management

Wetland ecosystems are ecologically and functionally significant elements of the water environment and, potentially, have an important role to play in helping to achieve sustainable river basin management by contributing to e.g. the abatement of the impact of pollution, mitigating the effects of droughts and floods and promoting groundwater re-charge.

The Water and Wetland Index considered the current integration of wetlands into water management, as well as existing wetland protection and restoration policies. For this purpose, the survey analysed public water management plans to see the role played by wetlands, and verified the existence and content of overall strategic wetland protection and restoration policies in the surveyed countries.



At the same time, WWF National Organisations, partner NGOs and other water stakeholders assessed current water resources and wetland policies in relation to issues such as the capacity to truly and adequately take wetlands into account in the water management decision-making processes, or the capacity of wetland policy to deliver economically, socially and environmentally sound management of wetlands.

The table below (table 2.6) summarises the results of this analysis, merging into one ‘score’ the existence of ‘formal’ means to manage and conserve wetlands and the evaluation of the adequacy of these means based on the opinion of WWF, partner NGOs and other water stakeholders.

Summary table

Table 2.6 Overview of the countries’ performance in relation to the role of wetlands in water management and wetland protection and restoration policies.

Wetland management									
	Wetlands in water management	Wetland Protection	Wetland Restoration	Total score		Wetlands in water management	Wetland Protection	Wetland Restoration	Total score
Switzerland	😊	😊	😊	0	Sweden	😞	😊	😞	-2
B-Flanders	😞	😊	😊	-1	Bulgaria	😞	😞	😞	-3
Estonia	😞	😊	😊	-1	Slovakia	😞	😞	😞	-3
Poland	😞	😊	😞	-1	Turkey	😞😞	😊	😞	-3
Austria	😞	😊	😞	-2	Ireland	😞😞	😊	😞😞	-4
B-Wallonia	😞	😊	😞	-2	UK-Engl &Wales	😞	😞	😞😞	-4
Finland	😞	😊	😞	-2	UK-N Ireland	😞	😞	😞😞	-4
France	😊	😊	😞😞	-2	UK-Scotland	😞	😞	😞😞	-4
Greece	😞	😊	😞	-2	Croatia	😞😞	😞	😞😞	-5
Hungary	😞	😞	😊	-2	Portugal	😞😞	😞	😞😞	-5
Italy	😞	😊	😞	-2	Spain	😞😞	😞	😞😞	-5
Latvia	😞	😊	😞	-2					

Performance assessment obtained taking into account the existence of formal arrangements and the opinion of WWF, partner NGOs and other water stakeholders. Countries are listed in descending order, while countries with the same score are listed in alphabetical order.  
 Key: 😊😊=Very good (+2); 😊=Good (+1); 😊= Fair (0); 😞= Poor(-1); 😞😞= Very poor (-2).

### *Main specific findings*

**Integration of wetlands into water management: a pending issue.** The WWI looked for evidence of the integration of wetlands into water policy in public water management plans or strategies, to verify whether, at least formally, the positive role of wetlands in the water cycle and in society is recognised. The assessment showed that in a large majority of the surveyed countries (17 out of 23) there is some reference to the positive function of wetlands in such documents. However, this is limited to the role played in the reduction of the impact of flooding (60% of the surveyed countries) or to their biodiversity value (65%), while other functions, such as the control and reduction of pollution, their role in the water cycle (aquifer recharge) or their socio-economic and cultural value are explicitly mentioned in only 30% of the countries.

**Table 2.7 Acknowledgement of the positive functions of wetlands in water management**

Wetland positive function	Countries' %
Reduction of the impact of flooding	60%
Control and reduction of pollutants (e.g. suspended solids and heavy metals pollution)	30%
Aquifer recharge	26%
Biodiversity value	65%
Socio-economic value of wetlands (source of income for local people through tourism, fishing, etc.)	30%
Cultural and historical value	30%

Percentage of surveyed countries that acknowledge the different positive functions of wetlands in water management plans or strategies.

Particularly striking is the case of Spain, where the National Hydrological Plan<sup>9</sup> – with a strong legal value – does not explicitly recognise wetland's role in water management and in fact works against wetland preservation. For example, it foresees an anachronistic water transfer – the Ebro transfer – that will eventually lead to the death of the Ebro delta, a site internationally protected under the Ramsar Convention and one of Europe's most important wetland areas.

The lack of formal acknowledgement of the value of wetlands shown by the WWI is fully confirmed by the lack of real integration of wetlands in water management. The survey found that wetlands are still confined to the “nature

<sup>9</sup> The Spanish National Hydrological Plan is a law approved in 2001 that includes a project for the transfer of 1050 hm<sup>3</sup> of water per year from the Ebro river basin to the river basins of Catalonia, and to the Júcar and the Segura rivers in the South of Spain.

conservation box” and water managers are reluctant to give them the same importance as rivers or lakes. This explains the very negative results in the overall assessment: in 21 out of 23 countries the current integration of wetlands into water management was judged as inadequate.

A fact that hampers this integration is that, in most of the countries, wetlands are managed by nature protection agencies, which have different administrative authorities, different budgetary resources and different priorities to those dealing with water management. This administrative division is also rooted in the water managers’ mentality, which means that in practice water management strategies, plans and actions do not take into account wetlands except for their natural value, and not even in all cases, as staff performing water management tasks often don’t have an ecological background.

**Isolated initiatives attempt to protect European wetlands.** In more than 70% of the surveyed countries there is some kind of ‘strategic document’ where general principles for wetland protection are stated. Unfortunately, these documents are often not legally binding (Greece, Portugal and Spain) and/or have no associated measures and plans, which limits their practical usefulness.

Most of the actions related to wetland protection are triggered either by local initiatives (e.g. local communities, environmental NGOs, individuals, etc) or by legal obligations resulting from international frameworks such as the Ramsar Convention and/or the EU Natura 2000 network. Even if a more strategic and legally-binding approach is hoped for to increase the positive effect of isolated actions, the overall assessment of wetland protection policy is quite positive. Indeed, the current wetland protection policy was judged as ‘quite adequate’ or ‘adequate’ in more than 60% of the surveyed countries.

The survey found that the biggest obstacles to an efficient national wetland policy are:

- **Lack of cooperation with other sectors.** In order to achieve efficient wetland conservation there is an urgent need for additional integrated planning and policy instruments to facilitate co-operation of the different sectors (nature protection, flood management, land use planning, water supply, agriculture).
- **Lack of resources.** In some countries (B-Wallonia, Finland, Latvia, Spain, Sweden, Switzerland) it was pointed out that wetland management is affected by a chronic lack of financial and human resources to ensure the implementation of existing conservation objectives. Moreover, since funds are often provided on a project-basis (e.g. for the restoration of a specific wetland area and for a limited time frame), there is no continuity in the programme funding, and thus project maintenance and follow-up is poor.
- **Incomplete wetland inventories.** Some countries (Austria, UK) still do not have a comprehensive national inventory on wetlands.

**European countries fail wetland restoration.** The WWI survey highlighted that the approach to wetland restoration needs to be significantly improved in all countries. Only four countries (B-Flanders, Hungary, Slovakia, Switzerland) have some kinds of national restoration strategy - which, however, are not associated with a coordinated set of measures - and no country except for Switzerland (where over the past 150 years, around 90% of wetlands have disappeared!), has a comprehensive inventory of wetlands that need to be restored. For this reason, restoration is done on a case-by-case basis without either a holistic view of the situation or a prioritisation of restoration actions at a wider scale.

In other countries, there are very patchy inventories that refer only to some areas within protected wetlands (e.g. Ramsar or Natura 2000 sites). Unfortunately, the positive role played by local communities or environmental NGOs that push for the restoration of specially significant wetlands is not enough to cover the existing restoration needs in a comprehensive and satisfactory way. For this reason, in more than 70% of the surveyed countries the existing wetland restoration policy was judged as 'inadequate'.



## *Chapter 3: Responding to Key Pressures and Impacts on Freshwater Ecosystems*

The Water and Wetland Index analysed how countries are attempting or aiming to alleviate their most severe water problems. For this reason, in each country the relevant WWF National Organisation, partner NGO or independent consultant was requested to assess at least one problem within each of the groups listed below, selecting the most significant and relevant ones.

- **Water quantity problems.** The main drivers to be analysed were agriculture, industry or domestic supply.
- **Water quality problems.** Here also the main causes to be considered were agriculture, industry or domestic supply.
- **River fragmentation,** due to dams or infrastructure for flood defence.

The results of the survey are extremely varied depending on the problem being considered. For this reason, in the present subchapter we have reported general trends about the response of authorities to key pressures and impacts on freshwater ecosystems, while more detail on each problem can be found in the corresponding section of this chapter (table 3.1).



**Table 3.1 Distribution of the surveyed countries versus the considered key pressures and impacts on freshwater ecosystems**

	Water Quantity			Water Quality			River Fragmentation	
	Agriculture (p. 30)	Household (p. 33)	Industry (p. 36)	Agriculture (p. 38)	Household (p. 42)	Industry (p. 44)	Dams (p. 46)	Flood Defence (p. 50)
Austria	•			•			•	•
B-Flanders		•	•	•	•			•
B-Wallonia		•	•	•	•	•		•
Bulgaria		•	•			•	•	
Croatia	•				•			•
Finland				•	•	•	•	•
France	•		•	•		•	•	
Greece	•			•			•	
Hungary	•	•	•	•	•	•	•	•
Ireland		•		•				•
Italy	•			•				•
Latvia				•	•		•	
Poland	•			•			•	•
Portugal	•			•			•	•
Slovakia		•		•			•	•
Spain	•				•		•	
Sweden		•		•	•	•	•	
Switzerland		•		•			•	•
Turkey	•				•		•	
UK-Engl/Wales		•		•	•			•
UK- N-Ireland		•		•	•			•
UK-Scotland		•		•	•			•
<b>Total countries</b>	<b>10</b>	<b>11</b>	<b>5</b>	<b>18</b>	<b>12</b>	<b>6</b>	<b>14</b>	<b>15</b>

Figures at the top of each column are the page numbers in this report where each specific pressure is discussed. Figures in the "Total countries" line represent the total number of countries where each specific pressure was assessed

### Box 3.1 It rains. Why should we worry?

In many countries, especially in Northern Europe, water is an abundant resource: according to a study by the European Environment Agency (2003)<sup>10</sup>, in parts of Northern European countries there has been an increase of more than 9% in the annual precipitation per decade between 1946 and 1999. Hence the reader might be surprised to find out that countries where it rains almost every day are nevertheless concerned with water quantity issues. This is because making “unwise” use of water (water wastage) has environmental and economic consequences in any country, independent of how much it rains!

1. Sometimes, intensive water exploitation is concentrated in specific water bodies (aquifers or small water courses), causing big problems for water availability and localised environmental problems to the ecosystems associated with a body. A significant example is the Tournaisis aquifer in the Walloon region, where water is extracted at a rate higher than the aquifer recharge capability, which has caused a water decline of about 70 metres since 1940.

2. Even if water is abundant in quantity, it does not necessarily mean that it is of a high enough quality for domestic use. Getting and distributing good quality water also has considerable economic and environmental costs. Hence it is no surprise that even authorities in the rainy UK and Ireland are very concerned with predictions for increases in water demand. In Northern Ireland, a 2002 study by the Water Service<sup>11</sup> estimated that demand will outstrip supply by 20% by 2030 – and with important water leakages in their distribution systems there is already waste of clean and ‘ready-to-use’ resources taking place.

3. In households and industry, every drop that comes out of the tap has to be treated after use before going back to rivers. This means that the more water used, the bigger the water treatment plants need to be to bring the water back to good quality. Water treatment plants that are overloaded with residual waters do not work at their peak capacity, and consequently the quality of the treated waters will suffer from water wastage by water users.

For the assessment of Governments’ reaction to water quantity and quality problems, the survey considered the existence and thoroughness of a strategy to tackle the problem (the approach) as well as the existence of a number of legal/regulatory, economic/financial, voluntary/information tools for each water-consuming sector.

<sup>10</sup> European Environment Agency, 2003 - Europe’s water: an indicator-based assessment.

<sup>11</sup> Water Service, 2002 – Water Providing for the Future – Northern Ireland Water Resource Strategy 2002-2030

For ways of dealing with river fragmentation, the Water and Wetland Index analysed the content of the current water infrastructure (e.g. dams) policies, the existence and frequency of applicability of measures to mitigate their impact on rivers, and the inclusion of non-structural measures in current flood-defence policy in the surveyed countries.

After analysing the relevant laws, programmes, strategies and sets of measures, the adequacy of these policies and instruments was assessed taking into account their focus and effectiveness, and their real implementation on the ground.

### *General findings*

The survey concluded that the **approach** to water quantity and quality problems is formally quite good, since the authorities normally acknowledge the severity of the problem, design solutions to solve it and consider the opinion of most of the relevant stakeholders when defining the overall approach. However, on average the content of this sort of approach was judged as adequate only for problems caused by industry (quantity and quality) and for pollution caused by domestic use of water.

For water consumption by agriculture and household, in many European countries the existing policies are inadequate mainly because the problem is being tackled by increasing water availability rather than by managing water demand. For pollution caused by agriculture, the survey judged the approach as ineffective in most instances, mainly because the solutions applied are not able to deal with issues such as diffuse pollution and the negative environmental impacts of intensive farming.

In the majority of the surveyed countries, the current policy to tackle the problem of river fragmentation due to dams or flood-defence infrastructures was judged as inadequate. Dams are still being widely built in Southern European countries and measures to mitigate their negative impact are not effectively enforced; flood defence is still mainly based on man-made infrastructures although non-structural measures are being used in some cases.

The **legal/regulatory** 'arsenal' to tackle water quantity and quality problems was found to be quite developed in most of the countries. However, a recurrent comment during the survey was that often legislation instruments are adequate only in theory. Indeed, more resources are needed to ensure a real enforcement of these legal tools. This means increasing the resources to control the correct application of the law 'on the ground', vigorously prosecuting infractions and, in case water users have real economic difficulties to meet the legal requirements, developing a means of financial support.

**Economic/financial instruments** include both charges and taxes that provide a disincentive for unsustainable water consumption and pollution, and ‘positive’ incentives such as direct and indirect subsidies for more ‘water-friendly’ technologies. The survey found that economic and financial instruments are insufficient in all the water-consuming sectors considered. For instance, only five out of 18 countries have generalised taxes on pesticides and fertilizers as a disincentive for overusing them and only four out of 12 countries provide households with subsidies and aids to improve on “wise” use of water.

Nevertheless, even if there are a very few positive and successful exceptions to this ‘rule’ (e.g. subsidies for rainwater tanks in households, by the Flemish authorities or the ÖPUL programme in Austria), this is a field where all the surveyed countries must make an effort. This is also a recommendation of the European Environment Agency report ‘Europe’s water: an indicator-based assessment’ (2003), which concluded that measures to control water demand, such as water pricing, and technologies that improve water use efficiency to contribute to reductions in water demand.

**Information/voluntary instruments** include advice on best practice, research and development activities, pilot projects and voluntary agreements. The survey found that these instruments do exist in most of the countries, but that they are still isolated initiatives and not sufficiently spread among the final water users. For this reason, only information instruments addressed to the reduction of industrial water consumption were judged as ‘quite adequate’ on average, while significant improvements are needed in all the other sectors.

Information instruments need to be improved especially for domestic water use, where they were positively judged in less than 30% of the surveyed countries. Thus, authorities are focussing their efforts on solutions such as increasing the purification capacity of water treatment plants, but disregard the need to engage citizens in changing their behaviour.

### 3.1 Water Quantity and Agriculture

#### Surveyed countries

Austria, Croatia, France, Greece, Hungary, Italy, Poland, Portugal, Spain and Turkey

#### Summary Table

**Table 3.2 Overview of the countries' performance in relation to their response to water quantity problems due to agriculture**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
Austria <sup>12</sup>	☹	😊	☹☹	☹
Croatia	☹	☹	☹☹	☹☹
France	😊	☹	😊	☹
Greece	☹	😊	☹/😊	☹
Hungary	☹	☹	☹	😊/☹
Italy	☹☹	☹	☹☹	😊
Poland	☹	😊	☹	☹
Portugal	☹	😊/☹	😊/☹	😊/☹
Spain	☹	😊/☹	☹	☹
Turkey	☹	☹	☹☹	😊
	☹ or ☹☹	-	☹ or ☹☹	☹ or ☹☹
Majority	90%	50%	80%	60%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders. Countries are listed in alphabetical order. In some cases, the assessment is better expressed with a double score: the face on the left of the slash represents the assessment of the adequacy of the instruments themselves, while the face on the right represents the assessment of the implementation of the instruments 'on the ground'. "Majority" shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😊 (adequate or quite adequate) and ☹ or ☹☹ (not adequate); in case there is no predominant score (50%), no score is shown. Key: 😊=fully adequate or almost fully adequate; 😊= adequate, but there are significant aspects that should be improved upon; ☹= not adequate except for a few aspects; ☹☹= not adequate.

<sup>12</sup> In Austria, water quantity problems are limited to specific areas only.

### *Main specific findings*

**Water and agriculture: an unsatisfactory approach.** The approach dealing with water quantity problems resulting from agricultural use is judged as inadequate in all the surveyed countries except for France, which considered it as ‘quite adequate’. The reasons for this vary depending on the country: authorities focus their policy on improving water availability via new infrastructures and not on managing water demand (Croatia, Hungary, Italy, Portugal, Spain, Turkey); there is a poor knowledge on and control of the real water use by agriculture ‘on the ground’ (Greece, Portugal, Spain); and the current approach does not put all the existing legal, financial and information instruments into a coherent and co-ordinated action (Austria, Greece).

**Uncontrolled use of water.** All the countries except for Turkey have a licensing system that regulates water consumption. However, in practice there are many obstacles to the application of this obligation, mainly the fact that there are many illegal water abstraction points. As an example, in Spain the Public Administration acknowledges that only 23.75% of the existing groundwater abstraction points are registered and authorised<sup>13</sup>.

The obligation of measuring the consumed water volumes is not widespread: in only 60% of the surveyed countries the law requires (in most of the cases) farmers to measure consumed water coming from external providers (e.g. distribution network), and only in 50% of cases are farmers normally obliged to measure the water that they abstract directly from wells or surface water bodies.

The lack of water metering has significant consequences on water use: it makes it even more difficult for water authorities to know the real water consumption due to agriculture, and it implies that farmers cannot be charged for the real amount of water that they consume. It is striking to see that this obligation does not exist in countries such as Portugal, Spain and Turkey, where there are severe water scarcity problems.

Nevertheless, the existence of a regulation is not a guarantee for its application on the ground. For instance, in Croatia farmers are requested to measure water both from internal (e.g. private well) and external sources, but the current economic difficulties of the agricultural sector and, in particular, of small farms, mean that this obligation can often only be respected by big farms.

**Who pays for water?** In only three out of 10 countries (France, Croatia and Hungary) farmers are normally charged for water use, while in the other countries this obligation applies only in isolated cases (e.g. in surface irrigation districts) or never. Moreover, often farmers pay for water consumption based on the irrigated area and not for the actual consumed volumes (Croatia, Italy,

<sup>13</sup> Spanish Ministry of Environment, 2000 - White Book on Water

Portugal, Spain). This, together with the fact that, particularly in Southern Europe, agriculture pays much lower prices for water than the other main sectors<sup>14</sup>, means that water use for agriculture is still indirectly heavily subsidised despite causing significant negative impacts on freshwater ecosystems.

**No 'positive' subsidies.** Among the economic instruments, the survey considered the existence of direct or indirect subsidies (i.e. aids, tax rebates, loans, tax breaks) aimed at supporting reductions of water consumption in agricultural practices (e.g. shifting from high-water-demanding crops to dry crops; use of techniques that facilitate the return of excess irrigation water into the ground; reduction of leakage from supply systems, etc). The survey found that these subsidies are common only in three countries (Hungary, France and Spain).

Production subsidies that include environmental pre-conditions explicitly referring to the minimisation of water abstraction only exist in one country (France), where the authorities recently introduced irrigation subsidies with specific environmental and ecological principles to promote better implementation of the French Water Act. This means that the subsidy's part related to irrigation is removed if the farmer does not have an irrigation authorisation and/or a water meter to calculate water consumption.

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<sup>14</sup> European Environment Agency, 2003 - Europe's water: an indicator-based assessment.

## 3.2 Water Quantity and Household

### Surveyed countries

B-Flanders, B-Wallonia Bulgaria, Hungary, Ireland, Slovakia, Sweden, Switzerland, UK-England/Wales, UK-Northern Ireland, and UK-Scotland

### Summary table

**Table 3.3 Overview of the countries' performance in relation to their response to water quantity problems due to household water use**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
B-Flanders	😊	😊	😐	😊
B-Wallonia	😞	😞	😞	😞
Bulgaria	😐	😐	😞	😞
Hungary	😞	😐	😞	😞
Ireland	😞😞	😞😞	😞😞	😞😞
Slovakia	😞	😞	😊	😞😞
Sweden	😊	😊	😊	😊
Switzerland	😊	😊	😊	😊
UK-England/Wales	😞	😞	😞	😞
UK-Northern Ireland	😞	😞	😞	😞😞
UK-Scotland	😞	😞	😞	😞😞
	😞 or 😞😞	😞 or 😞😞	😞 or 😞😞	😞 or 😞😞
Majority	64%	55%	64%	73%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders.. Countries are listed in alphabetical order. "Majority" shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😐 (adequate or quite adequate) and 😞 or 😞😞 (not adequate). Key: 😊=fully adequate or almost fully adequate; 😐= adequate, but there are significant aspects that should be improved upon; 😞= not adequate except for a few aspects; 😞😞= not adequate.

### Main specific findings

**Obligation to measure water at the tap.** In all the surveyed countries except for Ireland, Northern Ireland and Scotland, there is a regulation obliging households to have individual water meters to measure water consumption in all or in most of the cases. In these three countries, water consumption is

measured by water suppliers only. Consumers are not directly charged for the amount they consume. Instead, in the Republic of Ireland water costs are met from general taxation, while in Northern Ireland and Scotland an estimated amount to cover water supply and treatment costs for an average household is included in local property taxes.

**Tackling water leakages.** Water losses in the distribution network can reach a high percentage of the initial volumes being piped. As an example, in Ireland a major study<sup>15</sup> estimated water losses through leakage nationally at 47% of the original volume supplied. Legislators seem to be aware of the significance of the problem, since in all the surveyed countries except for Northern Ireland<sup>16</sup>, Scotland and Sweden there are regulations requiring water supply companies to monitor water leakages in their distribution systems.

All the countries, except for the Walloon region and Sweden, have regulations requiring water suppliers to invest in maintaining the distribution systems and reducing water leakages. However, the real application of this obligation is hampered by the fact that often the cost of reducing water leakages is higher than that of delivering additional water.

**New buildings like 'old' buildings.** In none of the surveyed countries, except for Hungary, are there regulations requiring the installation of water saving systems into new or renovated public buildings such as schools and hospitals, and in a few cases (e.g. Flanders) there are only guidelines and recommendations in this direction. Although public buildings are not the biggest water users, the lack of regulations in this field represents a missed opportunity to save water. As an example of how water saving systems can make a difference in consumption patterns for human supply, it was estimated<sup>17</sup> that if water efficient designs (e.g. low flush toilets, rainwater collection from roofs, etc) were added to the 1.4 million new homes expected to be built in the Southeast of England, enough water could be saved to supply approximately 200,000 new homes.

**Irish tap water for free.** The Republic of Ireland is the only country in the survey (and among the rest of the EU and OECD countries) having no charges for domestic water supply. Indeed, citizens do not receive water bills as water costs are funded from general taxation. In all the other countries, consumers are charged for water supply and the European Environment Agency<sup>18</sup> reported that there was a general trend towards higher prices in real terms throughout

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<sup>15</sup>Ws Atkings, PJ Tobin Ltd., McCarthy and Partners, 2000 – National Water Study.

<sup>16</sup>Although there are no regulations, in Northern Ireland the Water Service has been engaged in a major programme of pro-active leakage control. To strengthen this, about 37 million euro will be invested up to 2006 to reduce losses through leakage detection and repair.

<sup>17</sup>Environment Agency 2001 – Water Resources for the Future: a strategy for England and Wales.

<sup>18</sup>European Environment Agency, 2003 - Europe's water: an indicator-based assessment.

Europe in the 1990s. In particular Accession countries are progressively abandoning subsidised prices for water, which has led to an increase in water prices close to market prices (15 times in the case of Hungary) and, consequently, to a drop in water consumption per capita during the past decade (about 50% in Hungary; more than 40% in Slovakia).

**No incentives other than water bills for reducing consumption.** When looking at the existing economic instruments, one can conclude that water savings in households are definitely not a priority for water managers. Indeed none of the surveyed countries except for Flanders foresees generalised aids and subsidies for households that wish to improve their water efficiency and reduce water consumption. A positive exception is the Flemish region, where the regional government has accompanied its commitment for water savings in households with a number of economic incentives that are giving very positive results.

### Box 3.2 A positive example of support to water saving in households

The Flemish government has developed an interesting instrument: the *'samenwerkingsovereenkomst'* (environmental charter for municipalities and provinces). This is a voluntary agreement made between municipalities or provinces and the Flemish authorities. Municipalities and provinces get financial and other relevant support from the Flemish authorities if they subscribe to the agreement. They are able to choose, to a certain extent, which elements of the agreement they subscribe to and which goals they wish to accomplish. The agreement has a total period of six years and is presented in two three-year contractual agreements. For instance, this charter includes subsidies for rational use of water by households. There is an important subsidy for installing rainwater tanks and infiltration-wells. These subsidies are given by the municipality, the province and/or the Flemish region, and can be up to € 1,000 per household.

### 3.3 Water Quantity and Industry

#### Surveyed countries

B-Flanders, B-Wallonia, Bulgaria, France and Hungary

#### Summary table

**Table 3.4 Overview of the countries' performance in to relation their response to water quantity problems due to industrial water use**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
B-Flanders	😊	😊	😐	😐
B-Wallonia	😐	😞	😞	😞
Bulgaria	😐	😊	😞	😞
France	😐	😞	😞	😐
Hungary	😐	😐	😞	😐
	😊 or 😐	😊 or 😐	😞 or 😞😞	😊 or 😐
Majority	100%	60%	80%	60%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders. Countries are listed in alphabetical order. "Majority" shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😐 (adequate or quite adequate) and 😞 or 😞😞 (not adequate). Key: 😊=fully adequate or almost fully adequate; 😐= adequate, but there are significant aspects that should be improved upon; 😞= not adequate except for a few aspects; 😞😞= not adequate.

#### Main specific findings

Due to the limited number of countries that assessed the response of governments and water authorities to water quality problems resulting from industrial water use, and the heterogeneity of these countries, only a few general trends could be identified. These trends are outlined below, followed by a brief reference to the specific situation in each of the surveyed countries.

**Alterations in ground and surface water regimes.** In the surveyed countries, industry has a negative impact on water in terms of quantity mainly because water use is concentrated in space – in specific water courses or aquifers – where it causes alteration to the river's and/or aquifer's hydrological characteristics (e.g. over-abstraction from small rivers, alteration of water flow after hydroelectric barrages, decrease in water table levels).

**Industries taking the initiative to save money.** The survey found that a lot of initiatives in the field of water savings come directly from the industrial sector, since reducing water consumption implies saving money, not only in water bills, but also and mainly via the reduction of costs for water treatment, energy (e.g. hot water circuits) or transport (e.g. liquid sludge).

**Widespread obligation to measure water consumption.** In all the surveyed countries the use of water by industry is regulated by a system of licensing and quotas and through obligations to measure water consumption both when it is provided by water companies and when it is abstracted directly by the water-consuming industry. Linked to this water metering are water pricing policies.

In Bulgaria, the introduction of water pricing by the new Water Act (1999) was seen as an important step towards reduction of water consumption. However, the survey highlighted the need to introduce economic incentives and aids to further promote water saving practices.

In France, the approach to the problem was judged as quite adequate but all the ‘ecological’ aspects linked to the use of water need to be better considered in the current policy. Indeed, industries have negative effects on the environment, in particular the modification of the hydrological regime in rivers, which are not taken into account when calculating water prices for the industry sector.

In Flanders, the authorities are very sensitive to the problem. As a demonstration of this, they have put in place a number of information instruments on water savings by industry (web sites, guidance documents, workshops, research studies, voluntary agreements, etc). However, the survey found that the complexity of regulations – very specific and detailed – and the fragmentation of initiatives among several administrative levels (municipalities, provinces, agencies, etc.) decreases the practical effectiveness of existing instruments.

In Wallonia, existing regulations and taxes are regarded as satisfactory but their effective application is hampered by the existence of numerous unauthorised water wells that are beyond authorities’ control.

### 3.4 Water Quality and Agriculture

#### Surveyed countries

Austria, B-Flanders, B-Wallonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Poland, Portugal, Slovakia, Sweden, Switzerland, UK-England/Wales, UK-Northern Ireland and UK-Scotland

#### Summary table

**Table 3.5 Overview of the countries' performance in relation to their response to water quality problems due to agriculture**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
Austria	☹️	😊/☹️	😊	😊
B-Flanders	😊	☹️	☹️	😊
B-Wallonia	☹️	😊	☹️	☹️
Finland	☹️	😊	☹️	😊
France	😊	😊	☹️	☹️
Greece	😊	☹️/😊	☹️/☹️☹️	☹️
Hungary	☹️	😊/☹️	☹️	😊
Ireland	☹️	😊/☹️☹️	☹️☹️	☹️/☹️☹️
Italy	☹️☹️	☹️☹️	☹️☹️	☹️
Latvia	☹️☹️	☹️☹️	☹️☹️	☹️☹️
Poland	😊	😊	☹️☹️	☹️
Portugal	☹️	☹️	😊/☹️	😊/☹️
Slovakia	☹️	😊/☹️	😊/☹️	☹️
Sweden	😊	😊	😊	😊
Switzerland	😊	😊	😊	😊
UK-England/Wales	☹️	☹️	☹️	😊
UK-Northern Ireland	☹️	☹️	☹️	😊
UK-Scotland	☹️	☹️	☹️	😊
	☹️ or ☹️☹️	😊 or 😊	☹️ or ☹️☹️	😊 or 😊
Majority	67%	55%	72%	55%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders. Countries are listed in alphabetical order. In some cases, the assessment is better expressed with a double score: the face on the left of the slash represents the assessment of the adequacy of the instruments themselves, while the face on the right represents the assessment of the implementation of the instruments 'on the ground'. "Majority" shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😊 (adequate or quite adequate) and ☹️ or ☹️☹️ (not adequate). Key: 😊=fully adequate or almost fully adequate; 😊=adequate, but there are significant aspects that should be improved upon; ☹️= not adequate except for a few aspects; ☹️☹️= not adequate.

### *Main specific findings*

**A severe and complex problem.** According to a recent study by the European Environment Agency (2003)<sup>19</sup> “The impact of agriculture on water resources will have to be reduced if good surface water status and good groundwater status are to be achieved”.

Pollution due to agriculture is a very complex problem, especially as whilst point pollution can be controlled through adequate monitoring, the source of diffuse pollution is not easy to track, and as a consequence, responsibilities for pollution are often difficult to prove.

According to the WWI study, in all the surveyed countries the authorities recognise the severity of the problem, but only in 60% of cases they has a strategy to tackle it in a holistic way been designed. In only six countries (B-Flanders, France, Greece, Poland, Sweden, Switzerland) the approach was judged quite adequate but, also in those cases, the survey highlighted that there are significant aspects to be improved upon.



© WWF-Canon / Michel GUNTHER

Spraying strawberry field with pesticides Spain

<sup>19</sup> European Environment Agency, 2003 - Europe's water: an indicator-based assessment.

**Sufficient but poorly enforced regulations controlling pollution.** The control of emission of nutrients and the control on the use of pesticides through bans, quotas, permits or licensing exist in 94% and 83% of the countries respectively. However, in about 20% of these countries (Greece, Ireland, Italy, Portugal, UK-Northern Ireland), this control is limited only to specific, often reduced areas such as the Nitrate Vulnerable Zones<sup>20</sup>.

Mandatory training for staff handling pesticides and fertilisers applies in more than 60% of countries. Farmers are held legally responsible for the environmental damage they can cause, via agricultural activity, to freshwater ecosystems in almost 70% of the countries: although this does not necessarily mean that polluters are effectively prosecuted. Indeed, a frequent comment in the survey was that even when good legislation exists, its practical implementation is poor, due to the lack of resources to properly monitor licensing and to detect breaches of the law, and because legal prosecution of infractions is not vigorous enough.

Another policy aspect that needs to be improved is the poor coordination between the authorities in charge of agricultural matters and the authorities dealing with water quality issues (Latvia, Poland, UK-England/Wales), which diminishes or even nullifies the positive effects of actions taken by the different bodies.

**Diffuse pollution: a combined approach is needed.** In several countries (France, Portugal, Slovakia, UK-Northern Ireland, UK-Scotland) the survey pointed out that, since diffuse pollution is not easy to track and punish, laws and fines alone are not enough to tackle it. The combination of legal instruments with voluntary codes and agri-environmental schemes as well as the establishment of cross-compliance criteria (i.e. obligation to comply with a range of standards and code of practices to be entitled to receive public funds) is a promising approach, but it is poorly applied. Indeed, while in about half of the surveyed countries the existing legal and information instruments were judged as quite adequate or adequate, in only 20% of the countries economic incentives (taxes and subsidies) were considered as sufficient.

**Few charges or taxes to discourage pollution.** Less than 35% of the countries (B-Flanders, B-Wallonia, Finland, France, Hungary, Slovakia) have some kind of charges or taxes on emission of nutrients (animal manure or slurry) in the environment. Less than 40% (B-Flanders, B-Wallonia, Finland, France, Italy, Slovakia, Sweden) have charges or taxes on the use of pesticides and fertilisers, which would provide farmers with a disincentive to overuse these substances.

Only 33% of the countries have generalised deposit/refund schemes that provide farmers with a disincentive to dump empty containers or used

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<sup>20</sup> In EU countries, the Nitrates Directive (91/667/EEC) establishes the declaration of Nitrate Vulnerable Zones, where specific measures (e.g. Action Programme, Code of Good Farm Practice, etc.) are compulsory.

products. For example, in the Flemish region the Federation of Pesticides Producers is relieved from the eco-tax on packaging if it collects empty packaging or containers of their products. The initiative proved to be very successful, since in 2000 and 2001 the percentage of collected packaging was 88% and 85% respectively<sup>21</sup>.

**Pollution and production subsidies are de-coupled.** According to the survey, only Switzerland and Northern Ireland remove, at least in theory, production subsidies for farming methods that cause environmental harm to freshwater ecosystems. For example, in Northern Ireland, farms that are deemed to have a low pollution risk are eligible to join the so-called Farm Quality Assurance Scheme, which pays a premium on various products. If environmental obligations are not met (e.g. water pollution occurs) landowners lose out on their ongoing premium payments and are not eligible to join again for three years.

**Subsidy programmes to reduce pollution.** Some kind of direct or indirect subsidies aimed at reducing water pollution caused by agriculture do exist in all the countries except for Latvia and Sweden. A positive example in this field is the so-called ÖPUL 2000 programme in Austria, which finances ‘groundwater friendly’ agricultural practices and provides farmers with training. However, the existing subsidies apply only to isolated cases in 50% of the countries and the budget assigned to them is limited (e.g. in Slovakia less than 0.3% of total subsidies spent in the agricultural sector in 1999 were aimed at supporting ecological farming<sup>22</sup>), especially when compared to certain production subsidies in the EU Common Agricultural Policy, which pay out more money and override environmentally based efforts.

**Nitrate Vulnerable Zones.** In EU countries, the Nitrates Directive (91/667/EEC) foresees the declaration of Nitrate Vulnerable Zones (NVZs), where specific measures (e.g. Action Programme, Code of Good Farm Practice, etc.) are compulsory. The survey judged positively the existence of these zones, but claimed that the existing measures are not sufficient when water pollution is due to pesticides or in areas that are not included into NVZs. This is particularly worrying taking into account that in a number of countries (Belgium, France, Greece, Portugal) the currently declared Nitrate Vulnerable Zones are considered by far insufficient to truly protect water from nitrate pollution. On the other hand, in some countries such as Austria, which designated 100% of the national territory as a Nitrate Vulnerable Zone, water protection is performed through weak countrywide programmes of measures, which have a low impact on nitrates pollution.

<sup>21</sup> [http://www.phytofar.be/fr/ini\\_res.htm](http://www.phytofar.be/fr/ini_res.htm)

<sup>22</sup> Ministry of Environment of the Slovak Republic, 2002 – Rio+10. The National Report of the Slovak Republic on Sustainable Development.

### 3.5 Water Quality and Household

#### Surveyed countries

B-Flanders, B-Wallonia, Croatia, Finland, Hungary, Latvia, Spain, Sweden, Turkey, UK-England/Wales, UK-Northern Ireland and UK-Scotland

#### Summary table

**Table 3.6 Overview of the countries' performance in relation their response to water quality problems due to households**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
B-Flanders	😊	😐	😐	😊
B-Wallonia	😐	😐	😐	😞
Croatia	😞	😊	😞	😞😞
Finland	😐	😊	😞	😐
Hungary	😞	😐/😞	😞	😞
Latvia	😞	😞	😞	😞
Spain	😊	😊/😐	😐	😞
Sweden	😐	😊	😞😞	😐
Turkey	😞	😐	😞	😞
UK-England/Wales	😐	😐	😞	😞
UK-Northern Ireland	😐	😐	😞😞	😞😞
UK-Scotland	😐	😐	😞	😞
	😊 or 😐	😊 or 😐	😞 or 😞😞	😞 or 😞😞
Majority	67%	92%	75%	75%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders. Countries are listed in alphabetical order. In some cases, the assessment is better expressed with a double score: the face on the left of the slash represents the assessment of the adequacy of the instruments themselves, while the face on the right represents the assessment of the implementation of the instruments 'on the ground'. "Majority" shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😐 (adequate or quite adequate) and 😞 or 😞😞 (not adequate). Key: 😊=fully adequate or almost fully adequate; 😐= adequate, but there are significant aspects that should be improved upon; 😞= not adequate except for a few aspects; 😞😞= not adequate.

#### Main specific findings

**Sufficient legislative instruments.** In all the countries there is quite a high number of legislative instruments to regulate connections to the water treatment network and emissions of pollutants. All the countries have quality standards and, except for Hungary and Latvia, in all the countries there is an obligation for households to be connected to the water treatment network.

In all the countries, except for Latvia, the legislative instruments were judged as quite adequate or adequate. However, while in most of the EU Member States the level of application of these regulations is considered high, in non-EU countries and Accession Countries, the implementation is considered quite low, mainly because of lack of financial resources to meet the legal obligations or due to the scarcity of controls and the resulting lack of penalties.

**Small villages and isolated houses also pollute!** In Belgium, Finland and Spain lack of water treatment in small villages and rural areas represents a source of significant pollution, which is being neglected or is being tackled in an ineffective way (e.g. unsuitable technologies, too long a transition period; laxity with polluters). In only 40% of the surveyed countries single households are legally liable for pollution.

**Not enough attention paid to the source of the problem.** In less than 30% of the surveyed countries information and economic instruments to reduce water pollution from households (e.g. by reducing the use of polluting substances, by reducing the volume of wastewater, etc.) were considered as adequate or quite adequate. This is due to the fact that most efforts are focused on increasing the wastewater treatment infrastructure and the purification capacity of water treatment plants. The authorities leave aside complementary measures such as financial incentives to reduce pollution at the household level, and education and raising awareness among water users, who often are not fully aware of the damage to nature caused by domestic use of water.

## 3.6 Water Quality and Industry

### Surveyed countries

B-Wallonia, Bulgaria, Finland, France, Hungary, Sweden

### Summary table

**Table 3.7 Overview of the countries' performance in relation to their response to water quality problems due to industry**

	Approach to the problem	Legal instruments	Economic instruments	Information instruments
B-Wallonia	☺	☺	☺	☹
Bulgaria	☺	☺	☹	☹
Finland	☺	☺	☹	☺
France	☺	☺	☺	☺
Hungary	☺	☺/☹	☹	☺
Sweden	☺	☺	☺	☺
	☺ or ☺	☺ or ☺	–	☺ or ☺
Majority	100%	100%	50%	67%

Assessment based on the opinion of WWF, partner NGOs and other consulted water stakeholders. Countries are listed in alphabetical order. In some cases, the assessment is better expressed with a double score: the face on the left of the slash represents the assessment of the adequacy of the instruments themselves, while the face on the right represents the assessment of the implementation of the instruments 'on the ground'. "Majority" shows percentage of the predominant score for each aspect considered, grouped as ☺ or ☺ (adequate or quite adequate) and ☹ or ☹☹ (not adequate); in case there is no predominant score (50%), no score is shown. Key: ☺=fully adequate or almost fully adequate; ☺=adequate, but there are significant aspects that should be improved upon; ☹=not adequate except for a few aspects; ☹☹=not adequate.

### Main specific findings

**A better approach.** Tackling water pollution due to industrial activity follows a more structured and better developed approach than that used for the other sectors considered in the WWI. Indeed, the overall approach was judged as adequate or quite adequate in all the surveyed countries.

**Quite a complete legal arsenal.** In all the surveyed countries, legal instruments are quite developed, although in Hungary and Bulgaria the practical enforcement of regulations was considered to be insufficient.

**Scarce economic incentives.** The weak point in the fight against industrial water pollution is the shortage of economic tools to push for a reduction of pollution ‘at the source’, i.e. in production processes. Indeed, only Hungary has charges or taxes on the use of toxic products (inputs to production process), and only two countries (Hungary and France) generally have direct and indirect subsidies to reduce water pollution due to industrial activity. It would be very beneficial to have more of such subsidies because having less polluting equipment is often not economically ‘convenient’, since the cost of installation and use is not compensated by a significant reduction in the taxes and fees paid for polluting.

**Polluting is cheaper than treating.** Charges or taxes on emissions of pollutants and toxics coming from production processes do exist in all the surveyed countries with the exception of Finland. However, too often fees and taxes ‘for polluting’ are of little incentive for industries, which find it cheaper to pay fees and taxes for pollution remediation instead of treating their wastewater. Indeed, anti-pollution fees are too low to represent a real incentive when compared with the industry turnover or, as it happens in Latvia or in small factories in France, when industries pay a forfeit tax for emissions, which is not an incentive at all to reduce them. This is not in line with the “polluter pays” principle enshrined in the Treaty establishing the European Community (Article 174.2), which should be of widespread application across the European Union.

### 3.7 River Fragmentation and Dams

#### Surveyed countries

Austria, Bulgaria, Finland, France, Greece, Hungary, Latvia, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland and Turkey

#### Summary table

**Table 3.8 Overview of the countries’ performance in relation to their response to the problem of river fragmentation due to dams**

Surveyed Country		Surveyed Country	
Finland	😊	Slovakia	😞
France	😊	Spain	😞
Greece	😊	Sweden	😞
Switzerland	😊	Turkey	😞
Austria	😞	Bulgaria	😞😞
Hungary	😞	Portugal	😞😞
Latvia	😞		
Poland	😞		😞 or 😞😞
		Majority	71%

Countries are listed in descending order, while contries with the same score are listed in alphabetical order. “Majority” shows percentage of the predominant score for each aspect considered, grouped as 😊 or 😊 (adequate or quite adequate) and 😞 or 😞😞 (not adequate). Key: 😊=fully adequate or almost fully adequate; 😊= adequate, but there are significant aspects that should be improved upon; 😞= not adequate except for a few aspects; 😞😞= not adequate.

#### Main specific findings

**No strategies to maintain free-flowing rivers.** Dams are considered sources of “green” electricity and a solution to water shortage problems. In many countries, especially in Northern and Western Europe, dam construction rates have rapidly fallen during the past decade because most of the usable river stretches have already being built upon. On the other hand, in Southern and Eastern European countries dam construction still continues without an overarching approach ensuring that ecological values are taken into account. Proof of this is the fact that none of the countries planning new big dams in the next 10 years (Bulgaria, Greece, Latvia, Poland, Portugal, Slovakia, Spain, and Turkey) include the principle of maintaining selected rivers in their natural free-flowing state in their dam development strategy.

**Are dams ‘bad’?** In most of the surveyed countries dams remain controversial and only a few or no negative impacts are explicitly recognised in water policy.

Particularly striking is the situation of Spain where the recently approved National Hydrological Plan foresees the construction of 119 new dams and insists on old-fashioned water development models focussed on unlimited water supply, omitting any reference to the negative impacts of dams.

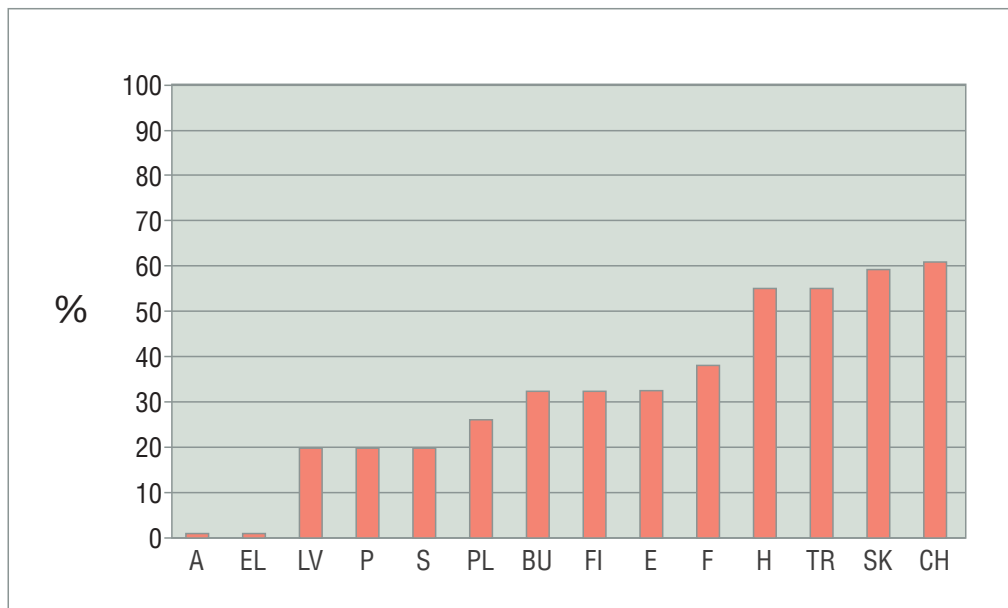
**Too few regulations for ‘old’ dams.** While the Environmental Impact Assessment (EIA) procedures oblige, at least formally, to take into account and limit the impact of newly built dams, there are still too few binding requirements to monitor and reduce the impact on the river and the riverine inhabitants of already existing dams. This means that issues such as the monitoring of the environmental and social impact of the dam or the evaluation of its economic performance is left to the voluntary initiative of dam operators in more than 70% and 50% of the surveyed countries, respectively.

The obligation of maintaining ecologically acceptable flow regimes downstream of dams in all or almost all the cases exists in less than 40% of the surveyed countries, and building fish ladders or passes specifically tailored to the site and species where the dam is located is normally required in less than 30% of the surveyed countries.



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Spanish National Hydrological Plan (SNHP). The Ebro-Xerta dam, Tarragona Province, Spain.



**Figure 3.5:** Binding obligations for dam operators to monitor and/or reduce the impact of existing dams expressed as a percentage of the maximum number and frequency of the measures considered in the survey (i.e monitoring and evaluation of the economic performance of the dam during its life cycle, optimisation of the dams benefits, assessment of the social and environmental consequences of the dam, building tailored fish ladders or passes, maintaining ecologically acceptable flow regimes downstream of dams, protecting particular stretches of the river or of the sub-basin as compensation measures).

Countries that have more binding requirements are Switzerland, Hungary, Slovakia and Turkey. However, in the survey it was stressed that even where these requirements exist, their practical implementation and effectiveness is poor and there are few or no controls to check that measures have been put into place. In particular the construction of fish-ladders is often just a ‘green-wash’ measure and the manner in which “minimum river flow” is defined is questionable. Proper implementation of the WFD should change that.

**Scarce Public Participation.** Public participation in the decision-making process for the approval of new dams takes place only as part of the Environmental Impact Assessment procedures, once the construction of the dam has actually been decided and enacting legal requirements. As a consequence, public involvement can help only to partially reduce the environmental damage but not to push for alternatives to the dam itself.

**World Commission on Dams.** In the wide majority of surveyed countries no evidence could be found that the recommendations of the World Commission on Dams (see box 3.3) are adopted in the existing national dam policy.

### Box 3.3 The World Commission on Dams' Recommendations

The World Commission on Dams (WCD) was set up in 1998 by the World Bank and the World Conservation Union (IUCN). Following a wide ranging global review of the world's dams, it published a report (*Dams and Development: A New Framework for Decision-making*) that provided a comprehensive and integrated framework for decision-making on the provision of water and energy services. It gave clear guidelines and recommendations for decision makers aimed at safeguarding rights, reducing the risk of conflicts and lowering overall costs, including social and environmental ones.

WCD's main recommendations related to strategic priorities for decision-making include:

1. The need for clear public acceptance, including the provision of reliable information to enable stakeholders to make informed decisions and participate effectively in decision-making. With regard to indigenous people, this must include prior informed consent.
2. A comprehensive assessment of all the options ensuring in particular that social and environmental aspects are given equal weight alongside technical factors.
3. A post-project review of existing dams, both from a technical and social point of view.
4. The development of a basin-wide understanding of the aquatic ecosystem and of ways of maintaining it.
5. The recognition that the benefits of dams should be widely shared.
6. Checks and balances to ensure that at all stages procedures comply with agreed standards.
7. Special reference to cross-border impacts.

### 3.8 River Fragmentation and Flood Defence

#### Surveyed countries

Austria, B-Flanders, B-Wallonia, Croatia, Finland, Hungary, Ireland, Italy, Poland, Portugal, Slovakia, Switzerland, UK-England/Wales, UK-Northern Ireland and UK-Scotland

#### Summary table

**Table 3.9 Overview of the countries’ performance in relation to their response to the problem of river fragmentation due to flood-defence infrastructure**

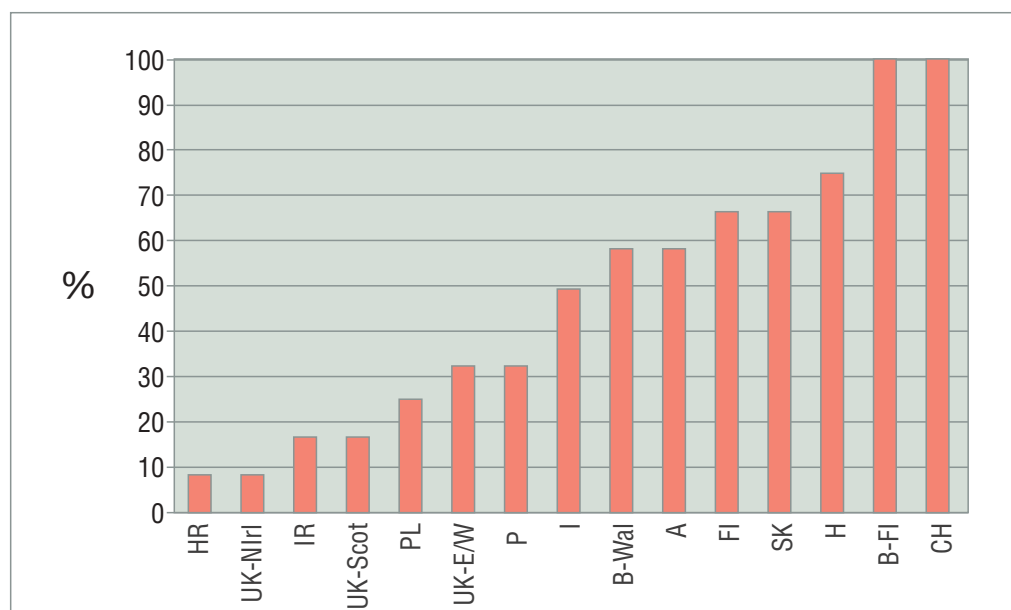
Surveyed Country		Surveyed Country	
B-Flanders	☺	Slovakia	☹
B-Wallonia	☺	UK-Engl/Wales	☹
Finland	☺	UK-Northern Ireland	☹
Switzerland	☺	Croatia	☹
Austria	☹	Ireland	☹☹
Hungary	☹	Italy	☹☹
Poland	☹	UK-Scotland	☹☹
Portugal	☹		☹ or ☹☹
		Majority	73%

Countries are listed in descending order, while countries with the same score are listed in alphabetical order. “Majority” shows percentage of the predominant score for each aspect considered, grouped as ☺ or ☹ (adequate or quite adequate) and ☹ or ☹☹ (not adequate). Key: ☺=fully adequate or almost fully adequate; ☺= adequate, but there are significant aspects that should be improved upon; ☹= not adequate except for a few aspects; ☹☹= not adequate.

#### Main specific findings

**A slow and uncoordinated shift towards better management.** Man-made infrastructure continues to be the first answer from authorities for the prevention and control of extreme flood events, often due to the fact that they have to face social pressure for safer towns and land. However, an intense debate is on-going in flood management sectors on how to achieve sustainable flood management.

The WWI looked for evidence of ‘soft’ measures in the existing national flood-defence strategies or programmes. The survey found that there is a slow, but generalised shift towards sustainable flood management principles as an answer to recent, extreme flooding events. At least ‘on paper’ the leading countries in this sense are the Belgian-Flemish region, Finland, Hungary, Slovakia and Switzerland.



**Figure 3.6:** Level of inclusion of 'soft' flood management measures in the existing national flood-defence action plan/set of measures, expressed as a percentage of the best performing country. The considered measures are specified in table 3.10.

Nevertheless, it is striking to see that important actions such as restoration of abandoned or active meanders and river arms, or measures to prevent deforestation are mentioned as flood-defence measures in less than 50% of the surveyed countries (table 3.10).

**Table 3.10 Inclusion of 'soft' flood-defence measures in the national flood-defence plans**

'Soft' flood-defence measure	% of countries
Limitation of soil sealing in built-up areas	20%
Reduction of barrier effects caused by roads and bridges	20%
Limiting the construction of new concrete infrastructures that alter river dynamics	20%
Maintenance or increase of soil infiltration capacity through controls on agricultural land use	33%
Removal of concrete infrastructures and restoration of rivers and streams to a natural or semi-natural condition	40%
Measures to protect river basins from deforestation and increase vegetated areas	40%
Restoration of abandoned meanders and river arms	47%
Protection and restoration of floodplains wetlands as a means of storing flood water during times of high flow	60%
Public awareness campaigns to inform the public about the risks of living in flood-prone areas	60%
Establishment of washlands along the rivers	67%
Mapping of risk for flood-prone areas illustrating the probability of flooding and the potential for damage	80%
Restrictions on land use in floodplains	87%

Types of 'soft' flood-defence measures mentioned in existing national flood-defence strategies or sets of measures and percentage of countries that explicitly refer to them.

**Insufficient integration of flood defence into relevant sector policies.** When looking at the specific policies of sectors that should implement flood defence measures (e.g. land use planning, transport, etc.), the survey found that soft flood-management measures are still poorly integrated into sectoral policies. Indeed, although in 80% of the surveyed countries nature conservation policies foresee measures that have a positive effect on flood prevention and control, this percentage drops down when considering all the other sectors: 60% of forestry, land and urban planning; about 40% for agriculture and water management and less than 30% for transport. This confirms that, in general, the authorities start to be receptive of new ways of managing floods, but that there is a significant and urgent need for better coordination between flood defence and other sectoral policies, in particular with land use and urban policies.

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Marsh landscape with houses in the background. In the middle of the Biebrza Marshes, Poland.

**Poor involvement of the public.** Only in four out of 15 surveyed countries (Hungary, Switzerland, UK-England/Wales, UK-Scotland), some non-governmental stakeholder representatives are involved in the planning of flood-management measures. In the rest of the cases, the involvement of the public, where it exists, is limited to very advanced phases of projects, mainly when an Environmental Impact Assessment is due prior to the construction of a man-made infrastructure.

**Lack of assessment of the effectiveness of existing measures.** Too often decisions about man-made flood-defence schemes are taken shortly after

severe flood events. This means that authorities plan big investments via ‘emergency’ decision-making processes and under pressure from public opinion asking for safer towns and land. This ‘rushing for solutions’ is not compatible with a detailed analysis of all the alternatives and with a comprehensive assessment of the already existing man-made flood-defence infrastructure.

The survey found that only five out of 15 countries (Hungary, Portugal, Switzerland, UK-England/Wales and UK-Northern Ireland) have some kind of mechanisms to assess in a ‘systematic’ way the effectiveness of existing flood-defence measures.

**Still a long way to go.** Despite the positive trend pointed out at the beginning of this section, current flood-defence policy is still far from being environmentally friendly. Indeed, in more than 70% of the surveyed countries the existing flood-management policy was judged as inadequate. Some of the reasons for this are:

- Funds to support environmentally friendly measures are still scarce (Austria, Slovakia);
- The flood-defence approach is still overly based on man-made infrastructures (Croatia, Italy);
- The coordination of flood management policy with other governmental policies such as land use planning, agricultural policy and urban policies is still insufficient (Austria, B-Wallonia, Portugal, UK-England/Wales, UK-Northern Ireland, UK-Scotland)

Positive developments such as the PLUIES programme in Wallonia, the Slovakian Programme of Flood Protection and the on-going conceptual reorientation of flood protection in Switzerland are encouraging attempts, but they must still prove themselves on the ground.

## Chapter 4: River Basin Survey

The WWI survey was also carried out in 15 river basins or national stretches of transboundary river basins where WWF is particularly active in the protection, conservation and/or restoration of freshwater ecosystems, or where these represent priority river basins for the organisation. Therefore, since no standard was set regarding the size and characteristics of the rivers, the WWI exercise at this scale was not intended to compare performances in water management by the relevant authorities in the different river basins. Instead, the objective of the river basin survey was to assess the current water policy in the ‘natural’ managing scale of waters – river basins – as reflected in and requested by the Water Framework Directive.

For each river basin, the following issues were assessed:

- 1– The application of integrated river basin management principles
- 2– The application of measures tackling the most urgent freshwater problems (water quantity problems, water quality problems and river fragmentation).

**Table 4.1 River basins surveyed in the Water and Wetland Index**

Country	River basin	River basin extent	Considered causes of impacts on freshwater ecosystems
Austria	Danube East	12,966 Km <sup>2</sup>	Agriculture (water quantity and quality), dams, flood defence
Bulgaria	Danube (Bulgarian part)	46,930 Km <sup>2</sup>	Industry (w. quantity and quality), household (water quantity), dams
Croatia	Drava (Croatian part)	701 Km <sup>2</sup>	Agriculture (water quantity) households (water quality), dams, flood defence
France	Léguer	500 Km <sup>2</sup>	Agriculture (water quality), industry (water quality), dams
Greece	Pinios	9,500 Km <sup>2</sup>	Agriculture (water quantity and quality)
Hungary	Drava (Hungarian part)	8,200 Km <sup>2</sup>	Agriculture (water quantity and quality), household (water quantity and quality), industry (water quantity and quality), dams, flood defence
Ireland	Shannon	14,700 Km <sup>2</sup>	Household (water quantity) Agriculture (water quality), flood defence

Italy	Po	71,000 Km <sup>2</sup>	Agriculture (water quantity and quality), flood-defence
Poland	Narew (Polish part)	27 000 km <sup>2</sup>	Agriculture (water quantity and quality), flood defence
Portugal	Guadiana (Portuguese part)	11,580 Km <sup>2</sup>	Agriculture (water quantity and quality), dams flood defence
Slovakia	Morava (Slovakian part)	2,227 Km <sup>2</sup>	Agriculture (water quality), flood defence
Sweden	Göta älv	Km <sup>2</sup>	Household (water quantity and quality), industry (water quality), agriculture (water quality), dams
Spain	Guadiana (Spanish part)	55,220 Km <sup>2</sup>	Agriculture (water quantity and quality), dams
Turkey	Buyuk Menderes	23.873 Km <sup>2</sup>	Agriculture (water quantity), industry (water quality), dams
UK	Thames	12,917 Km <sup>2</sup>	Household (water quantity), agriculture (water quality), flood defence

The size and characteristics of the selected river basins is varied. They range from 500 Km<sup>2</sup> (the French Léguer) up to 71,000 Km<sup>2</sup> (the Italian Po). Some of them are national stretches of transboundary rivers (Danube, Drava, Guadiana, Morava, Narew). Others are hosting ‘pioneer’ pilot projects on freshwater management (Buyuk Menderes, Léguer, Narew, Pinios, Shannon), and for this reason they represent, at least for some aspects, an “exception to the rule” in their own country. Some of them, such as the Göta älv river in Sweden or the Slovakian Morava, have moderate human pressure, while others such as the Guadiana in Spain and Portugal or the Thames in the UK host significant economic and human activities dependent on water.

From this picture, it is clear that extrapolating the WWI river basin results to the countries or comparing river basins among themselves can be a misleading exercise. Hence, in this chapter we point out only a very few general conclusions of the river basin survey, while the survey results are summarised in separate fact sheets, river basin by river basin, that are distributed together with this report.

**River basin management: an evolving situation.** The way of managing water at the river basin level in EU Member States and Accession Countries is evolving at the moment as the first steps of Water Framework Directive (WFD) implementation are slowly being taken, which requires setting up the river basin scale at the centre of water management. For this reason, there are great expectations regarding the changes this should bring about. Thus, river basin structures that are being created or that already exist will have to prove their ability to meet the high standards of the Directive.

The changes required by the WFD are much needed. Indeed, while in a few of the surveyed rivers (Croatian Drava, Leguér, Po, Spanish Guadiana) water is managed according to the river basin boundaries – at least within the same country! - in the other cases, management boundaries are administrative borders of provinces or regions. This results in very fragmented water management competencies, since the river falls under the mandate of a number of national, local and regional entities.

**More attention to local specifics.** In several cases it was felt that responsibilities and resources of regional/local authorities are too limited to really contribute to effective water management at a river basin level. Moreover, as legislation and decisions applying to freshwater are often approved at a central level, they do not necessarily fit with the specific river basin situation, which limits the effectiveness of measures and laws.

**Transboundary river basins.** In the surveyed transboundary river basins, agreements and institutional relationships between countries are normally managed through national authorities, although there are often informal contacts and data exchanges between water authorities at lower administrative levels. Among the cases considered in the survey, the International Commission for the Protection of the Danube River represents a very interesting and promising attempt to pull together 13 parties (12 countries and the European Union) sharing the same river basin.

**Public participation.** The survey analysed some good initiatives aimed at improving on the quality of participation of water stakeholders in decision-making processes (Leguér, Narew, Po, Shannon, Thames) and hopefully the lessons learnt in “pioneer” projects will soon be applied right across the countries. Indeed, public participation at a river basin level is still very weak. For instance, in several river basins (Buyuk Menderes, Danube East in Austria, Bulgarian Danube, Croatian Drava, Guadiana) access to background documents related to decision-making processes for water management seems to be more difficult than at a national level, due to stronger bureaucratic obstacles. This is quite worrying when considering that the WFD requires the involvement of “interested parties” (Article 14, WFD) in the definition of river basin management plans. Obstacles to effective public participation are:

- Lack of resources of the regional and local authorities that are directly responsible for the participatory processes.
- The limited human and financial resources of local civil associations bound to take part in the public participation processes.
- Documents sent out for public consultation are too technical for stakeholders without specialist knowledge.
- In the case of information and consultation on legislation, responsibility of public participation activities lies with regional and local authorities, which have none or limited competence on the approval of the legislation itself.

# Annex: List of contacts

## **Austria**

Ulrich Eichelmann, Freshwater Officer  
**WWF-Austria**  
Ottakringer Str. 114-116  
A-1162 Vienna  
t: +43 1 488 17 279  
e: ulrich.eichelmann@wwf.at

## **Belgium**

Philippe Weiler, Freshwater Officer  
**WWF-Belgium**  
Bd. E. Jacquain 90  
B-1000 Brussels  
t: +32 2 340 0974  
e: philippe.weiler@wwf.be

## **Bulgaria**

Vesselina Kavrakova, Bulgarian Projects Officer  
**WWF Danube Carpathian Programme**  
67 Teanko Tcerkovski Str., Entr. 3, App.3  
BU-1421 Sofia  
t: +359 2 964 05 46/45  
e: kavrakova@internet-bg.net

## **Croatia**

David Reeder, International Drava Co-ordinator  
**WWF Danube Carpathian Programme**  
c/o Mihalko  
Rakoczi u. 103  
H-2092 Budakeszi  
t: +36 23 450 899  
e: daimawr1@yahoo.co.uk

## **Estonia**

Robert Oetjen, Freshwater Officer  
**Estonian Fund for Nature**  
EE-Riia 185A  
50104 Tartu  
t: +372 7 428 443  
e: robert@elfond.ee

## **Finland**

Jari Luukkonen, Conservation Director  
Tanja Pirinen, Conservation Assistant  
**WWF Finland**  
Lintulahdenkatu 10  
SF-00500 Helsinki 50  
t: +358 9 774 0100  
e: jari.luukkonen@wwf.fi ,  
tanja.pirinen@wwf.fi

## **France**

Edith Wenger  
**WWF Institute for Floodplains Ecology**  
Josefstrasse, 1  
D-76437 Rastatt  
t: +49 7222 380720  
e: wenger@wwf.de

## **Greece**

Panagiota Maragou, Protected Areas Officer  
Daphne Mantziou, Freshwater collaborator  
**WWF Greece**  
26 Filellinon Street  
GR-105 58 Athens  
t: +30 210 331 4893  
e: p.maragou@wwf.gr, d.mantziou@wwf.gr

## **Hungary**

Laurice Ereifej, Freshwater Officer  
**WWF Hungary**  
Németvölgyi út 78/b  
H-1124 Budapest  
t: +36 1 214 5554  
e: laurice.ereifej@wwf.hu

## **Ireland**

Paddy Mackey, Director  
**VOICE - Voice of Irish Concern for the Environment**  
7 Upper Camden Street  
IR-Dublin 2  
t: +353 67 24315 or +353 87 2399507  
e: badoir@iol.ie

## **Italy**

Paolo Negri, Freshwater campaign collaborator  
**WWF Italy**  
via Orseolo, 12  
I-20144 Milano  
t: +39 328 35 70 517  
e: liberafiumitrentino@email.it

## **Latvia**

Ints Mednis, Conservation Director  
**WWF Latvia**  
Elizabetes str. 8-4  
LV-1010 Riga  
t.: +371 750 5640  
e: IMednis@wwf.org.lv

## **Poland**

Marta Majka Wisniewska, Freshwater Policy Officer  
**WWF Poland**  
ul. Wisniowa 38  
PL-02-520 Warszawa  
t: +48 22 849 84 69  
e: MWisniewska@wwf.pl

## **Portugal**

Sofia Parente, General Directorate Advisor  
**Liga para a Protecção da Natureza**  
Estrada do Calhariz de Benfica, n.º 187  
P-1500-124 Lisboa  
t: 351 217 780 097  
e: lpn.natureza@mail.telepac.pt

## **Slovakia**

Jan Hanusin  
Jilemnickeho 19,  
SK-911 01 Trencin  
e: hanusin@savba.sk or jan\_hanusin@stonline.sk

## **Spain**

Guido Schmidt, Freshwater Officer  
**WWF Spain**  
Gran Via de San Francisco, 8 esc D  
E-28005 Madrid  
t: +34 91 354 05 78  
e: guido@wwf.es

## **Sweden**

Lennart Henrikson, Freshwater Officer  
**WWF Sweden**  
Ulriksdals Slott  
S-170 81 Solna  
t: +46 8 624 74 00  
e: lennart.henrikson@wwf.se

## **Switzerland**

Andreas Knutti, Freshwater Officer  
**WWF Switzerland**  
Hohlstrasse 110  
CH-8010 Zürich  
t: +41 1 297 2121  
e: Andreas.Knutti@wwf.ch

## **Turkey**

Hatice Dinc, Freshwater and Wetlands Project Officer  
**WWF Turkey**  
P.K. 599  
TR-Ankara Ulus 06250  
t: +90 312 310 3304  
e: hdinc@wwf.org.tr

## **United Kingdom**

Rob Oates, Natural Rivers Programme Coordinator  
**WWF United Kingdom**  
Panda House  
Weyside Park  
UK-Godalming  
Surrey GU7 1XR  
t: +44 1483 412 558  
e: ROates@wwf.org.uk

### **WWF's Water and Wetland Index – Critical issues in water policy across Europe**

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

For further information contact:

#### **WWF Living Waters Programme - Europe**

Sergey Moroz, Programme Officer

tel.: +33 1 44 64 40 43

fax: +33 1 55 25 84 74

e-mail: [smoroz@wwf.fr](mailto:smoroz@wwf.fr)

**WWF**

**Living Waters Programme - Europe**

c/o WWF France

188, Rue de la Roquette

75011 Paris

France

<http://www.panda.org>

