

Issues Paper

Workshop: “From Monitoring to Programmes of Measures”

24-25 October 2007, Brussels

This paper was compiled by Ecologic on behalf of the workshop organisers of Germany and UK. The text is to a large extent based on abstracts provided by the workshop speakers.



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1 Introduction

The DE-UK workshop “From Monitoring to Programmes of Measures” (24/25 October 2007, Brussels) takes place in the context of the ongoing implementation process of the EU Water Framework Directive (WFD).

It is jointly organised by the Water Working Group of the German Federal States (Bund/Länder-Arbeitsgemeinschaft Wasser, LAWA), the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and authorities from the UK (Department for Environment, Food and Rural Affairs; the Scottish Government; Department of the Environment of Northern Ireland; Welsh Assembly Government and the UK Technical Advisory Group UKTAG). The organisation of the workshop is supported by Ecologic, Institute for International and European Environmental Policy, Berlin.

Aims of the workshop

Focus of the workshop is the exchange of information on the different approaches followed in Germany and the UK in relation to key current WFD implementation tasks. While German and British water managers are the key audience, the workshop will also involve other selected Member States, thus aiming to make the results available for discussions at the broader European level. The workshop will focus on three main issues:

- A Different approaches on the use of biological and environmental standards
- B Setting environmental objectives
- C Current status of work on the programmes of measures

First, speakers from the UK and Germany will give presentations on these issues to the plenary. Following this, working group sessions will take place to allow for more in-depth discussion among workshop participants (see workshop programme on page 18). Additional input will be delivered by keynote speeches on approaches in France and the Danube river basin.

The main aim is for participants to discuss key aspects of the above implementation tasks and to highlight that there are different processes used and possibly different ways of understanding these issues in Germany and the UK. Presentations at the workshop shall provide information on the approaches used in Germany and the UK, including examples from particular river basin districts.

Furthermore, the workshop will serve as a platform to identify the uncertainties involved when moving from classification (biological and environmental standards) to the programmes of measures, and to discuss ways to deal with these uncertainties. At the same time, the workshop will address the fact that practical approaches are needed to deliver on the WFD requirements.

Finally, a common set of conclusions will be drawn, and a panel of high-level staff from the water administrations of different European countries will help to bring the technical results to the political level.

Further information on the workshop, including programme and organisational details, is available at <http://www.ecologic-events.de/wfd2007/en/index>.

Aims of this issues paper

The purpose of this paper is to introduce the key issues at hand and summarise the main challenges that will be put forward for discussion at the workshop. It first gives a short introduction to the current issues of WFD implementation (section 2) and to the administrative frameworks for WFD implementation in the UK and Germany. The core part of the paper presents the approaches to biological and environmental standards, objective setting and programmes of measures in Germany (section 4) and the UK (section 5). These two sections are mainly based on the abstracts provided by the workshop speakers, who will present these issues in more detail during the respective plenary sessions.¹ The presentations will be made available on the workshop website.

In addition, the paper also presents the main working tasks and questions to be addressed in the three working groups in section 6. Important sources of information are listed in section 7.

2 Addressing current WFD implementation tasks

The Water Framework Directive sets out clear deadlines for each of the requirements which adds up to an ambitious overall timetable. The key milestones of this timetable are listed below.²

<i>Year</i>	<i>Issue</i>	<i>Reference</i>
2000	Directive entered into force	Art. 25
2003	Transposition in national legislation	Art. 23
	Identification of River Basin Districts and Authorities	Art. 3
2004	Characterisation of river basin: pressures, impacts and economic analysis	Art. 5
2006	Establishment of monitoring network	Art. 8
	Start public consultation (at the latest)	Art. 14
2008	Present draft river basin management plan	Art. 13
2009	Finalise river basin management plan including programme of measures	Art. 13 & 11
2010	Introduce pricing policies	Art. 9
2012	Make operational programmes of measures	Art. 11
2015	Meet environmental objectives	Art. 4
2021	1 st management cycle ends	Art. 4 & 13
2027	2 nd management cycle ends, final deadline for meeting objectives	Art. 4 & 13

The three implementation issues (biological/environmental standards, objective setting, programmes of measures), which build the focus of this workshop, target actions which are currently being taken by Member States to meet the upcoming deadline for the 1st River Basin Management Plans.

¹ The abstracts for Germany (section 4) were translated and/or shortened. Section 5 includes the original abstracts that were sent by UKTAG.

² Source http://ec.europa.eu/environment/water/water-framework/info/timetable_en.htm.

These three issues are in practice closely inter-linked to each other. Biological/-environmental standards are needed to classify water bodies (i.e. identify the current status of water bodies) but also to set the environmental objectives, to identify what measures need to be taken to achieve the objectives and finally to monitor the achievement of objectives.

The three issues are also bound to each other by common uncertainty problems. The WFD requires MS to achieve a set of environmental objectives by 2015. However, good ecological status (GES) has not yet been defined. There is uncertainty about the ultimate goal of GES and what conditions in morphology, chemistry and physical parameters are needed to support this. Similarly, the classification of water bodies is subject to some degree of uncertainty, being based on a sampling of parameters and estimated confidence. As a consequence, there is significant uncertainty surrounding the objectives that measures need to achieve, which in turn means that MS have to develop their programmes of measures in a context of uncertainty.

3 Implementing the WFD in the UK and Germany

An overview of river basin districts in Germany and the UK is given in Annex I on page 16.

In the UK, the Department for Environment, Food and Rural Affairs (Defra), the Scottish Government, the Welsh Assembly Government and the Department of the Environment, Northern Ireland have policy responsibility for the implementation of the WFD.³

Much of the implementation work is undertaken by the Competent Authorities, which are the Environment Agency in England and Wales, the Scottish Environment Protection Agency in Scotland and the Environment and Heritage Service in Northern Ireland.

To help deliver a consistent approach in the implementation of the WFD, the Agencies responsible for the implementation of the Directive have established the UK Technical Advisory Group (UKTAG) comprised of experts from the UK environment and conservation agencies.⁴

In Germany, the implementation of the WFD is essentially defined by the federal structure of the country, with tasks divided between the Federal Republic (Bund) and the Federal States (Länder). In the area of water management, the federal government enacts framework laws, while the Länder determine the actual structure and substance of water management within the limits set out in federal legislation. The execution of water management regulations is exclusively in the hands of the Länder. The 2006 reform of German Federalism somewhat changed the allocation of competencies in water management between the Federal and Länder level. The Federal government may now set general standards or requirements related to water, while there is some leeway for the Länder to deviate from Federal legislation.

In most Länder, power over water resource protection and management is allocated at several levels of government, normally following the general structure of administration.

³ Source <http://www.defra.gov.uk/environment/water/wfd/index.htm>.

⁴ Information on the guidance and UKTAG work programme can be obtained from the UKTAG website: www.wfduk.org.

To achieve consensus on matters of common interest and to harmonise water law across borders of Länder, the water authorities of the Länder together with the Federal government established a joint working group (LAWA - Länderarbeitsgemeinschaft Wasser - Water Working Group of the German Federal States).⁵ In the context of WFD implementation, the objectives of the LAWA are to harmonise implementation between the different Federal States, and to communicate experiences and opinions to the European Commission. Co-ordination efforts take place in three committees (groundwater and water supply; surface waters and coastal protection; water law) and through LAWA plenary meetings.

4 From monitoring to programmes of measures in Germany

4.1 Biological monitoring of rivers according to the WFD

Presenter: Klaus Wendling

For the assessment of water status according to the WFD, nationally standardised procedures are used. In order to comply with the requirements of the WFD, new biological evaluation methods had to be developed in Germany, as no suitable procedures existed that could determine the ecological status of rivers through the use of fish, phytoplankton or macrophytes/phytobenthos. Existing procedures were capable of reflecting pressures derived from chemical substances, but not hydromorphological pressures. Research initiatives started in Germany soon after the WFD was adopted, financed by the LAWA, the German Environmental Ministry and the Ministry of Education and Research.

Work on biological evaluation methods is mostly complete today. Guidelines are available for the ecological assessment based on makrozoobenthos and based on macrophytes and phytobenthos (see section 7). The intensive use of these procedures in the Länder monitoring in 2007 – 2008 should deliver further knowledge which will feed back into the procedures. Thus, a solid knowledge basis should be achieved for the development of the 1st River Basin Management Plans due by late 2009.

A common characteristic of all biological evaluation procedures (for fish, macrozoobenthos, macrophytes/phytobenthos, phytoplankton) is their multimetric character: individual “metrics” are combined, usually through averaging, to determine the ecological status. The advantage of using metrics is that they can partly make particular pressures evident and in this way help to conclude on the “right” measures. The evaluation of the metrics is based on lists with specific ecological information that exist for different groups of organisms.

The individual metrics of the biological evaluation can also provide valuable indications regarding the measures that should be included in the programmes of measures. Examples of pressures that can be biologically indicated include acidification, contamination with salts, nutrients, organic matter, toxic contamination, river continuity, morphological impairment or straightening. The full potential of these diagnostic capabilities should be

⁵ Most information based on German WFD Article 3 Report. The LAWA website (www.lawa.de) has guidance and information material on the Water Framework Directive, partly also in English.

tapped, aimed at delivering decision-makers with information on the causes of these pressures and on measures for the improvement of the ecological status.

4.2 Setting objectives: The case of agricultural pressures in the Elbe

Presenter: Sabine Rosenbaum

The German workshop contribution on objectives setting deals with the specific approach developed at the Elbe River Basin District for tackling agricultural pressures (diffuse pollution). The Elbe River Basin is a large river basin that involves 10 German Federal States.⁶ Generally, agricultural pressures are one of the largest problems for water management in Germany, and the possibility of extended deadlines (Art. 4 WFD) will have to be widely made use of with regard to nutrients across all river basins. This means that interim targets (*Zwischenziele*) will be set in order to show how the water bodies will progressively be brought to the required status.

The Elbe approach is characterised by the fact that it determines objectives and necessary measures for nutrient reduction on the basis of an analysis of the coastal waters into which the Elbe waters are eventually discharged.

Work in the context of the Helsinki Commission has shown that the necessary nutrients reduction (of 50%) to achieve the good status cannot be reasonably fulfilled in the Elbe River Basin by 2015 for reasons of technical feasibility and natural conditions. Therefore it is necessary to extend the deadline for the purposes of a stepwise achievement of the objectives. More extensive objectives have to be set out in the following River Basin Management Plans.

At the workshop, it will be illustrated in detail that for the 1st River Basin Management Plan, provisional objectives have been set for a certain reference site (“Seemanshöft”) at a crossing point between fluvial and transitional water. These objectives are set on the basis of the demands of the coastal water bodies on the one hand and of the measures considered as feasible by 2012 on the other hand. With the planning targets for N and P concentrations as a starting point, reduction rates for the different sub-basins (tributaries) are calculated on the basis of the model MONERIS.

4.3 Programmes of measures: Early measures in the 1st RBMP

Presenter: Stefan Hill

The main aspects of the approach to drafting a programme of measures of the German Federal State Rhineland-Palatinate (*Rheinland-Pfalz*; RLP) for surface waters will be presented in the context of the German-UK workshop. RLP is located in its entirety within the Rhine River Basin.

The RLP approach is motivated by the aim to find a solution to the implementation challenges posed by the WFD, and at the same time to create synergies with the water management measures and programmes that are already in place.

⁶ Bavaria, Berlin, Brandenburg, Hamburg, Mecklenburg-Western Pomerania, Lower Saxony, Saxony, Saxony-Anhalt, Schleswig-Holstein and Thuringia.

The process set out by the WFD (i.e. first appraisal of water bodies at risk or not at risk by 2005; monitoring programme to verify the risk appraisal by 2006; management objectives of water bodies determined by 2009) poses a great challenge to water management, due to the complex interlinkages between the different steps that are required, and to the uncertainties involved. In particular, decisions about the necessary measures and their nature, extent and geographical coverage will have to be made at a time when the following important information and methods are still missing:

- evaluation process, particularly for biological parameters,
- definition of good ecological status,
- definition of the ecological potential
- management goals defined for individual water bodies/water body types, and
- knowledge about the effects of particular measures on the ecological status.

In addition, the timeframe for making measures operational under the 1st RBMP is limited in practice to 3 years (2009 – 2012).

In Rhineland-Palatinate, the following approach is proposed as a solution to these challenges: Instead of discontinuing the existing long-standing programmes of measures in the water management sector, it was decided – as in various other Länder and countries – to adopt these actions as so-called “early measures” in the 1st WFD programme of measures. This concerns the long-standing water management programmes with measures in the field of water supply and groundwater protection, wastewater treatment, water protection, especially in terms of water renaturation / water development. Several of these measures serve the maintenance or improvement of the status of groundwater or surface waters. At the workshop, the content and extent of the early measures for surface waters in the 1st RBMP 2009 of Rhineland-Palatinate will be shown in detail using maps and tables.

Only after the results of the monitoring programmes are known, as well as after the completion of the classification process, can the current PoMs be adjusted with regard to the WFD requirements.

4.4 Programmes of measures: Involving the public in the WFD implementation

Presenter: Joachim Bley

In the German-UK workshop, a further German contribution will deal with the importance of public involvement in the planning of measures. In this context, specific practical experiences gained in the Federal State of Baden-Wuerttemberg will be shared with the other participants.

The German Federal State of Baden-Wuerttemberg (BW) attaches high importance to public information and participation. The objectives are to achieve a transparent planning process, to respect the concerns of stakeholders, and to use the experiences and knowledge of the public in order to get a comprehensive basis for decision-making. Thus, a sound management plan can be developed, and at the same time ownership among the public and support for the implementation of the plan during the formal procedures in

2008 and 2009 can be created. In spring 2001 a BW-water council was founded, consisting of the “organised public” (municipalities, stakeholders from nature conservation to hydropower, from farmer associations to industry, etc.) and the ministries of economy, agriculture and environment.

Public information and participation is offered on three levels: The BW-level, the working area level (6 areas in total for river management purposes) and the sub-working area level (30 areas of ca. 1000 km²). The local river basin management planning in BW is conducted on the basis of supra-regional, regional and local objectives on the water body level, which are delineated as small management units. The involvement of the public as a main part of management planning is being carried out within the 30 “sub-working areas”. In principle 3 meetings are offered in each of these 30 sub-working areas: a “starting session” where main problems are explained, an “ideas evening” and a “results evening”.

In 2005, two pilot projects on public involvement in river basin management planning were carried out in 2 sub-working areas. The measures were identified during “ideas evenings” on the basis of existing river development plans (administration’s proposal), which were produced under a different focus based on the water protection law before 2000. During these evenings everybody is invited to bring in his own input and to scrutinise the administration’s proposals. Representatives from the local environment authority (*Landratsamt*) provide advice and act as “rapporteurs”. The discussions are partly very conflictive, due to the differences in interests of the participants.

For the water administration, the main benefit is that information of concrete and feasible measures on the local level (*Who might sell two hectares for a fish breeding ground? What does the local fishermen’s association intend to do? Where do disproportionate costs appear? etc.*) are made available, which could otherwise not be obtained. The planning process is transparent to a very high extent, and stakeholders can express their views at a very early stage. Thus, the Baden-Wuerttemberg river authorities create a comprehensive basis for their decisions.

5 From monitoring to programmes of measures in the UK

5.1 Using environmental standards to identify where measures are necessary

Presenter: Martin Marsden

Overview

The UK uses environmental standards to identify where measures may be necessary to deliver good ecological status. These standards cover the water quality, hydrology and morphological conditions which are necessary to achieve high, good, moderate, poor and bad status. The UK has been revising its environmental standards to ensure that they are consistent with the achievement of the biological normative descriptions in Annex V.

New environmental standards

The UK Technical Advisory Group (UKTAG) has published the chemical, hydrological and morphological environmental standards covering:

- Rivers
- Lakes
- Transitional Waters
- Coastal waters

Information on these standards can be found at www.wfduk.org.

How environmental standards are used

Preventing deterioration in status

We will use environmental standards to define the capacity which is available for further development without leading to deterioration in status. New developments must not result in the failure of an environmental standard. In exceptional circumstances we will consider the application of an Article 4(7) exemption where an environmental standard is likely to result in the failure of an environmental standard and therefore a deterioration in status.

Requiring improvements in status

We will only take measures to improve the status of a water body where we are confident that there is a problem.

There are at least two distinct ways we will use the environmental standards to make decisions.

One approach, the direct model, applies when we are confident that failure of the standard alone demonstrates that harm to the water environment will occur. There is no need to seek corroboration by looking at biological data. An example of the direct model is setting numeric limits in discharge permits for ammonia, in order to meet a water quality standard for ammonia in a river. Where we are confident that an ammonia standard is being exceeded then we will take measures to address this.

The second approach, the indirect model, will be used when there is less confidence that failure of the standard is enough to judge the cause of damage or risk. In this case we will then look for supporting evidence and, if appropriate, use a checklist to confirm whether a water body is damaged or at risk. This checklist could include biological data, for example the absence of key species, or the occurrence of nuisance species. An example of the indirect method is when a phosphorus standard is used to help decide when to designate sensitive areas under certain Directives e.g. Urban Waste Water Treatment Directive. Failure of the phosphorus standard is taken with other indicators, some biological, as confirming that action is needed.

Both of the approaches, direct and indirect, often involve using data from monitoring to make some form of comparison with the standard. In other cases it might involve calculations using models. Nearly always these data or models will be associated with errors and uncertainty, and these translate into statements of confidence that a standard has been met or has been failed.

The Water Framework Directive expects us to know and report these levels of confidence. They will be used to decide the amount of monitoring required to detect particular levels of failure or deterioration. The confidence that the standard has been failed will be considered when deciding what action to take under the Directive's programmes of measures. The standard applied will be that associated with the objectives that are set for individual water bodies. Uncertainty allows a lower objective to be applied and hence different measures than might otherwise have been required.

5.2 Setting environmental objectives

Presenter : Peter Pollard

Overview

The WFD requires us to set objectives to improve and maintain the status of water bodies. In order to define objectives we need to understand the current status of water bodies and be able to predict any changes in status which may result from actions we have taken. There are major challenges in defining objectives for the first River Basin Management Plan.

Defining current status

UKTAG has been developing biological monitoring tools and environmental standards which will allow the UK environmental agencies to classify the status of the water environment. Many of the new tools are only just being completed and monitoring has only started for some during 2007. In addition, there are some pressures such as hydromorphology where the biological monitoring tools are still being developed. As a consequence, the UK will also use all available information in order to provide the best possible classification of status. For example, we will use risk assessment criteria to complement information from our biological monitoring. This does mean that the confidence which we have in our classification will vary and it is our intention therefore to define our confidence in the classification results. In some cases the level of confidence will be low.

UKTAG has been developing rules for classifying the ecological potential of heavily modified and artificial water bodies. UKTAG has been working with stakeholders to develop the “alternative approach” to defining ecological potential by providing lists of measures which must be delivered if good ecological potential is to be achieved. The confidence of this classification will depend upon the detail of the site-specific assessment which has been undertaken.

Defining objectives

Identifying the appropriate environmental objective requires an understanding of the cost and feasibility of achieving good status by 2015. Cost and feasibility depend on the measures that would be needed. Consequently we see objective setting as being inextricably linked to the processes we use to make decisions on measures.

We have already started the process of working out and agreeing measures that will be implemented in the first, second and, in some cases, third plan periods. We will set objectives based on what we expect these measures to achieve in terms of improvements

to the status of our water bodies. Many decisions on measures for the first plan will have been consulted on, and made, before the draft river basin plans are produced in 2008.

Our programmes of measures will include general requirements and incentives for action to address widespread problems, such as diffuse agricultural pollution. They will also include action targeted on particular water bodies. Some of this targeted action will be delivered through our permitting systems for activities such as abstractions, impoundments and point source discharges.

Objectives and confidence

The appropriate use of extended deadlines and less stringent objectives is a key part of the river basin planning process, allowing Member States to prioritise and pace environmental improvements over successive planning cycles. We are prioritising our actions to improve status by concentrating measures on those water bodies where we have high confidence that they fail good status.

In many cases we will have defined measures which will deliver environmental benefits within the period of the first River Basin Management Plan. We may have a high level of confidence in the proposed objective because we are confident in the existing classification and in the effect of the proposed measure upon status.

There will be other water bodies where the level of confidence that we have in setting objectives is lower because of a combination of the following factors.

- We may be confident that a water body is not good status but we may not be confident in the status classification. For example we may be 60% confident that the water body is moderate, 30% confident that it is poor and 10% confident that it is bad. This uncertainty will be reflected in the objective which we set. If we define measures that are calculated to move the water body from moderate to good, there is a 40% chance that the water body will not reach good status.
- It may not be possible to predict with confidence the consequences of a measure. For example, many diffuse pollution measures may move biological quality in the right direction but we can not confidently predict the status outcome.
- In some situations it may be possible to predict the status outcome but the rate at which this will be achieved may be uncertain. For example, reducing nutrient loading to a lake can have a predictable response but the water body may take anything from 10 to 50 years to reach good status.

The level of confidence which we have in setting objectives will clearly be an important consideration in producing the River Basin Management Plan. It is clearly important not to set objectives which cannot be met but it is also important to include objectives for pressures such as diffuse pollution and morphology where the link between measures and status is not well defined. The UK has not decided how to address this issue and would be interested in comparing ideas on addressing uncertainty in objective setting. For example, should we include estimates of uncertainty with our objectives as well as the classification results?

5.3 Steps towards developing programmes of measures to address water quality pressures in UK

Presenter: David Martin

Overview

There is no standard way of identifying measures. They will be produced at a number of different scales from national through to local and they will result from decision-making processes by a range of different organisations. We will use the River Basin Management Planning process to coordinate the definition of measures and to ensure that they represent a cost-effective means of protecting and improving the environment. In the first River Basin Management Plan, many of the measures will have been determined by decision-making process which pre-date the WFD.

Significant Water Management Issues

In Scotland and in England and Wales, the Scottish Environment Protection Agency (SEPA) and the Environment Agency have produced River Basin District Significant Water Management Issues consultation documents by working closely with key stakeholders.

These documents describe for each River Basin District the water management issues identified as being of particular concern, the measures already in place to address the issues, and possible new or amended measures that might be included in the Draft River Basin Management Plan. SEPA and the Environment Agency have worked closely with their respective National and Area Advisory Groups in Scotland and River Basin District Liaison Panels in England and Wales to ensure that stakeholders have been directly involved in the development of each Significant Water Management Issues report.

In Northern Ireland a similar approach has been taken, using a National Stakeholder Forum. Because three Northern Ireland River Basin Districts are shared with another Member State (Ireland), UK and Ireland have cooperated to produce the Significant Management Issues Reports jointly. Consideration is being given to whether a joint approach could also be applied to the draft RBMPs

These documents illustrate that a large number of measures are already in place which will contribute towards the delivery of WFD objectives. The UK Agencies expect that each River Basin Management Plan will include these existing measures and that these will make a significant contribution to the achievement of objectives.

The development of a programme of measures for River Basin Management Plans in the UK is taking place in a series of overlapping steps.

Examples of developing measures

Development of the Programmes of Measures Tool Kit

In England and Wales, following a review of the availability and effectiveness of measures, proposals have been developed for new and amended measures (including regulatory powers) to control diffuse pollution from agriculture and urban areas. These proposals cover measures that act at the national scale (e.g. product controls) and

measures that can be designed and targeted to address issues at the local (sub-water body) level.

In Scotland a review of statutory requirements from the WFD was undertaken in 2000. Following this exercise a number of new regulatory controls were put in place to allow appropriate authorisation of water abstractions and impoundments, point source pollution and engineering activities. Controls over diffuse urban and rural pollution are currently in development and subject to formal consultation processes.

National measures

In England and Wales a preliminary cost-effectiveness analysis exercise aimed to identify the most cost-effective packages of measures across sectors to achieve WFD requirements. For each major pressure it identified the environmental gap to be addressed, the source apportionment of the pressures, considered a full range of measures and provided information on costs, effectiveness, uncertainty and non-water benefits.

Site-specific programmes of measures

Site-specific measures have been developed with stakeholders to deliver specific improvements. In some cases these measures have been driven by legal controls, in other cases participatory approaches have been developed on the basis of a cooperative approach between a number of organisations.

Option Appraisal Tools

A number of tools have been developed to help select and appraise possible programmes of measures. These include both mathematical and conceptual models. These can predict the outcome of measures which affect water quality at local, regional and national scales.

6 Questions for discussion at the workshop

To facilitate discussions, the organisers would like to invite the delegates to prepare for the workshop’s moderated working groups by considering the leading questions set out below. For all working groups, the general tasks are to:

- Identify and discuss key issues – compare processes – exchange information and ideas,
- Identify solutions to common problems, if possible – identify practical approaches,
- Draw common conclusions.

6.1 WG A: Biological and environmental standards

- Advantages/disadvantages of the different approaches for defining and using environmental standards? Which aspects of these approaches are most practical?
- How to deal with uncertainty related to the use of biological and environmental standards? How to make statements of confidence related to different types of pressures? Implications of uncertainty for monitoring, for setting objectives and for defining measures?
- Which metrics are proving difficult or time-consuming to determine when using biological standards? Which pressures are more complicated to evaluate? What solutions can be found?
- What is the role of the intercalibration process in the national discussions? Is the current status considered sufficient?

6.2 WG B: Objective setting

- Discuss/compare approaches for objective setting in the 1st planning cycle and beyond.
- What are most practical approaches? What opinions are there on setting provisional objectives for the 1st RBMPs?
- How to deal with uncertainty in objective setting?
- Links of objective setting to decisions on measures? Links to classification?
- How can objectives at different spatial scales (from water body to river basin) be linked? How can spatial separation between the pressure and effect be taken into account (e.g. nutrients in coastal waters)?

6.3 WG C: Programmes of measures

- What are practical approaches for identifying measures? Differentiation on the national and local level?
- What does a summary of the programme of measures look like?
- How can measures from previous water management processes be used at best?
- How should we deal with uncertainty when taking measures?
- How do we make sure that measures are cost-effective?
- How to involve the public in a practical way?
- How can ecological potential be set?
- International co-ordination in transboundary river basins?

7 References and further information

Abstracts

- Bley, Joachim 2007: Involving the public in WFD implementation – practical experience from Baden-Wuerttemberg. Abstract of presentation for October workshop.
- Hill, Stefan 2007: Die Bedeutung der vorgezogenen Maßnahmen im Rahmen des ersten Bewirtschaftungsplans nach der EG-WRRL am Beispiel der Maßnahmen betreffend die Oberflächengewässer. Abstract of presentation for October workshop.
- Marsden, Martin 2007: Using environmental standards to identify where measures are necessary. Abstract of presentation for October workshop.
- Martin, David 2007: Steps towards developing programmes of measures to address water quality pressures in UK. Abstract of presentation for October workshop.
- Pollard, Peter 2007: Setting environmental objectives. Abstract of presentation for October workshop.
- Rosenbaum, Sabine 2007: Objective Setting in RBD Elbe – how can agricultural pressures be addressed? Abstract of presentation for October workshop.
- Wendling, Klaus 2007: Biologisches Monitoring nach WRRL in Fließgewässern – Bewertungsgrundlagen und Hinweise für die Bewirtschaftung. Abstract of presentation for October workshop.

EU documents

- Communication from the Commission to the European Parliament and the Council: **Towards sustainable water management in the European Union** - First stage in the implementation of the Water Framework Directive 2000/60/EC. Available at http://ec.europa.eu/environment/water/water-framework/implrep2007/index_en.htm.
- CIS Document: **Environmental Objectives under the Water Framework Directive**. Policy Summary and Background Document, 20 June 2005. Available at <http://circa.europa.eu/Public/irc/env/wfd/library>.
- CIS Document: **Exemptions to the Environmental Objectives under the Water Framework Directive**, allowed for new modifications or new sustainable human development activities (WFD Article 4.7). Policy Paper. Available at <http://circa.europa.eu/Public/irc/env/wfd/library>.

Information sources for Germany

General information

Web-based information and exchange platform **WasserBLICK** at www.wasserblick.net.

LAWA guidance document on WFD Implementation - LAWA-Arbeitshilfe zur Umsetzung der EG-Wasserrahmenrichtlinie, 2003. http://www.lawa.de/pub/kostenlos/wrrl/Arbeitshilfe_englisch.pdf.

Guidelines for identification and analysis of target groups for public participation in river basin management - Zielgruppenermittlung und Zielgruppenanalyse für die Öffentlichkeitsbeteiligung im Flussgebietsmanagement. <http://www.umweltdaten.de/publikationen/fpdf-l/3115.pdf>.

Sources on ecological assessment methods

Handbook on biological monitoring based on Makrozoobenthos - Methodisches Handbuch Fließgewässerbewertung, Handbuch zur Untersuchung und Bewertung von Fließgewässern auf der Basis,

des Makrozoobenthos vor dem Hintergrund der EG-Wasserrahmenrichtlinie.

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Verfahrensleitungen für die ökologische Bewertung von Makrophyten und Phytobenthos in Seen bzw. Fließgewässer zur Umsetzung der EU-Wasserrahmenrichtlinie). Bavarian Environment Agency.

http://www.lfu.bayern.de/wasser/forschung_und_projekte/phylib_englisch/instruction_protocols/index.htm.

Information on **ecological assessment related to fish fauna** is available at http://www.landwirtschaft-bw.info/servlet/PB/menu/1116288_11/index1057583835130.html.

Lorenz, A., Hering, D., Feld, C. K. & Rolauffs, P. (2004): A new method for assessing the impact of hydromorphological degradation on the macroinvertebrate fauna in five German stream types.

Hydrobiologia 516: 107-127.

Mischke, U., H. Behrendt, J. Köhler, & D. Opitz (2005): Überarbeiteter Endbericht zum LAWA-Vorhaben: Entwicklung eines Bewertungsverfahrens für Fließgewässer mittels Phytoplankton zur Umsetzung der EU-Wasserrahmenrichtlinie. 20.05.2005, Im Auftrag der Länderarbeitsgemeinschaft Wasser (LAWA), IGB.Berlin-Friedrichshagen. 1-99.

Diekmann, M., Dußling, U., Berg, R., 2005. Handbuch zum fischbasierten Bewertungssystem für Fließgewässer (FIBS) - Hinweise zur Anwendung (erhältlich auf der Website der Fischereiforschungsstelle: <http://www.lvvg-bw.de>, weiter unter ‚Fischereiforschungsstelle‘ und ‚WRRL‘).

Information sources for the UK

UKTAG Report on UK Environmental Standards and Conditions (2006).

http://www.wfduk.org/UK_Environmental_Standards/UK_Environmental_Standards/ES_Phase1_final_report/

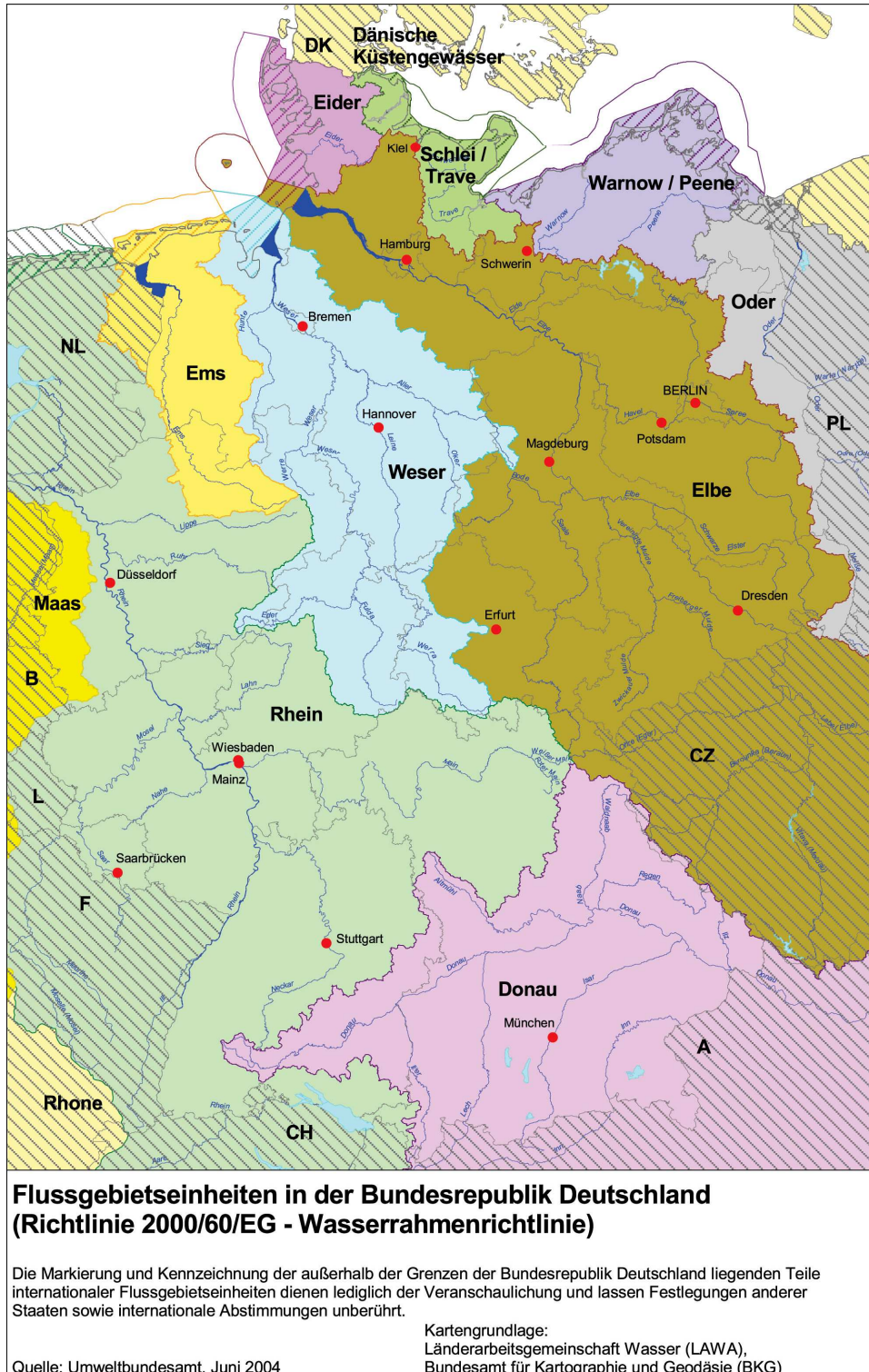
UKTAG Draft principles for an objective setting framework for river basin management planning in accordance with the Water Framework Directive.

http://www.wfduk.org/tag_guidance/Article%2011/POMObjectivesetting/WFD13cObjectivesetting/view.

Further **UKTAG guidance documents** under http://www.wfduk.org/whats_new/TAG_Guidance/view.

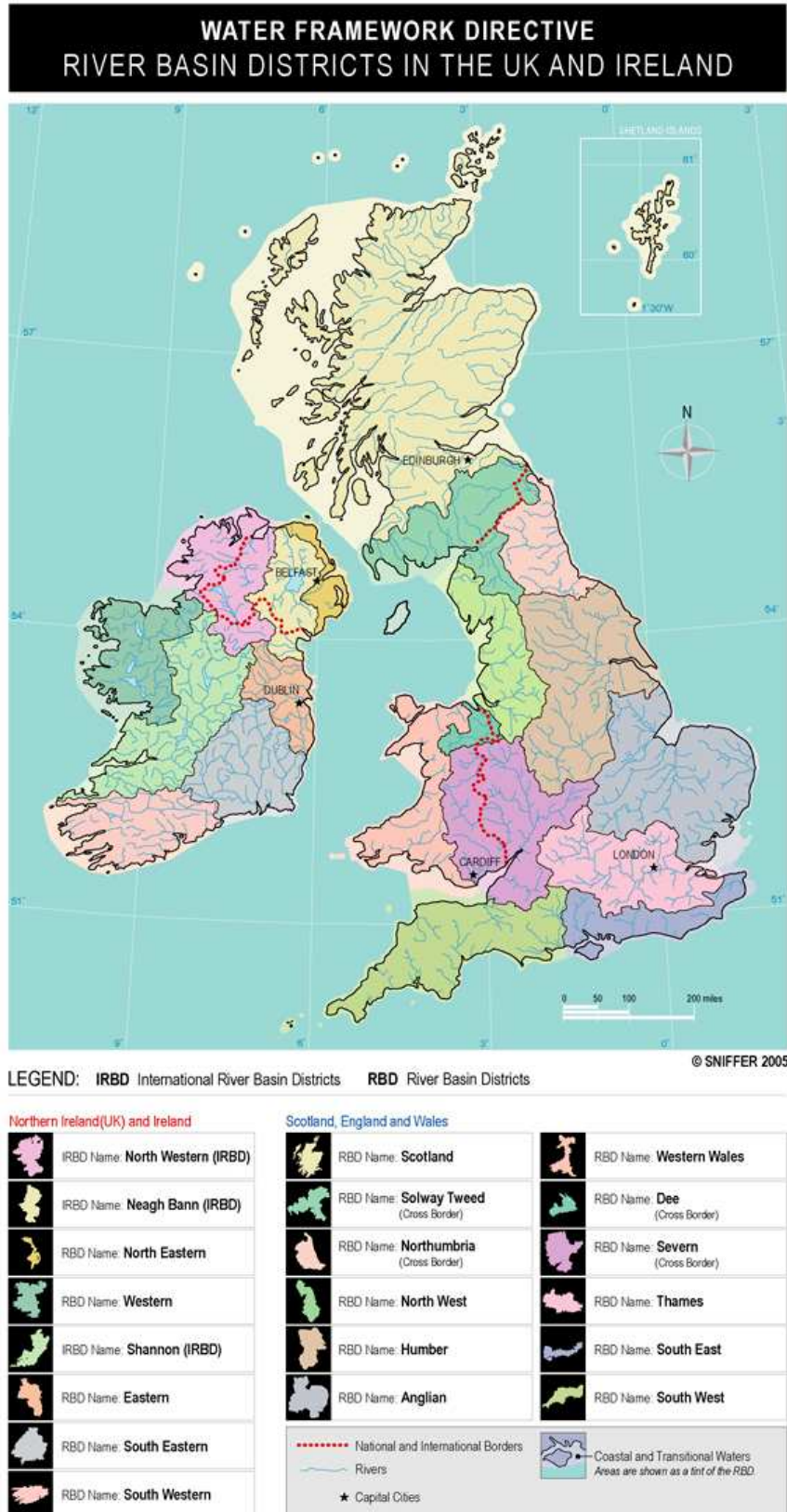
8 Annex I: River Basins in Germany and the UK

Figure 1 River Basins in Germany



Source: Website of German Federal Environment Agency.

Figure 2 River Basins in the UK



Source: UKTAG website.

9 Annex II: Workshop Programme

1st Day: 24 October 2007		
Block 1	Setting the Scene	Chair: Werner Theis
10:00 – 10:40	Welcome note	Heidrun Piwernetz, Head of the Representation of Bavaria to the EU
	Welcome and Introduction	Werner Theis, LAWA Chair
	Setting the Scene – United Kingdom	Martin Hurst, Water Director UK
	Setting the Scene – Germany	Fritz Holzwarth, Water Director Germany
	Setting the Scene – European Commission	Helmut Blöch, DG Env
Block 2	Biological and environmental standards	Chair: Martin Hurst
10:40 – 11:20	Biological monitoring for rivers according to WFD - Principles for the approach and evidences for the programme of measures	Klaus Wendling, LAWA
	Using environmental standards to identify where measures are necessary	Martin Marsden, SEPA
	Questions	
11:20 – 11:50	Coffee Break	
Block 3	Objective Setting	Chair: Fritz Holzwarth
11:50 – 12:50	Approaches to objective setting in Germany – how can agricultural pressures be addressed?	Sabine Rosenbaum, Schleswig-Holstein, DE
	Setting environmental objectives	Peter Pollard, SEPA
	Questions / Discussion Block 2 & 3	
12:50 – 13:50	Lunchbreak	
Block 4	Programmes of Measures	Chair: José Rocha Afonso, Deputy Water Director Portugal
13:50 – 15:30	Importance of early measures in terms of the set-up and implementation of the first RBMP	Stefan Hill, Rheinland-Pfalz, DE
	Involving the public in planning of measures- experiences from Baden- Wuerttemberg	Joachim Bley, Baden-Württemberg/Rhine Commission
	Steps towards developing programmes of measures to address water quality pressures in UK	David Martin, Environment Agency
	Programmes of Measures – state of play in France	Jean-Claude Vial, Ministère de l'Ecologie, FR
	Questions / Discussion	
15:30 – 16:00	Coffee Break	
Block 5	Working Sessions	
16:00 – 18:00	Session A: Biological and environmental standards	Chair: Ulrich Irmer, DE Rapporteur: Clifford Henry, UK
	Session B: Objective setting	Chair: Martin Marsden, UK Rapporteur: Sibylle Pawlowski, DE
	Session C: Programmes of Measures	Chair: Simone Pio, PT Rapporteur: Peter Pollard, UK
19:30	Dinner	

2nd Day: 25 October 2007		
Block 6	Working Sessions: Drawing conclusions	
9:00 – 10:00	Session A: Biological and environmental standards	Chair: Ulrich Irmer, DE Rapporteur: Clifford Henry, UK
	Session B: Objective setting	Chair: Martin Marsden, UK Rapporteur: Sybille Pawlowski, DE
	Session C: Programmes of Measures	Chair: Simone Pio, PT Rapporteur: Peter Pollard, UK
10:00-10:45	Coffee Break	
Block 7	Presentation and discussion of conclusions	Chairing panel: David Baxter (UK), Fritz Holzwarth (DE), Helmut Blöch (COM), Stefan Hill (DE LAWA), José Rocha Afonso (PT), Helena Matoz (SI)
10:45 – 11:00	Keynote speech: The Danube case – Current/important issues (e.g. phosphates)	Carmen Toader, Romanian Environment Ministry
11:00 – 11:45	Reports from the Working Sessions (Rapporteurs)	
11:45 – 12:45	Discussion of working session reports; bringing conclusions from the technical to the political level; outlook / key issues for the future	
12:45	Close of workshop	Werner Theis, LAWA Chair