Implementing the EU Water Framework Directive: A seminar series on water

Organised by WWF with the support of the European Commission and TAIEX

PROCEEDINGS
Seminar 3: Good Practice in River Basin Planning
Brussels, 29 and 30 May 2001
Contents

Foreword........................................................................................................................................ v
Acknowledgements and Further Information................................................................................ vii
Synthesis Note – Contents............................................................................................................. 1
Synthesis Note............................................................................................................................... 3

Seminar Presentations

Session 1: Integrated River Basin Planning in Europe and the EU Water Framework Directive

Overview presentation:
Integrated river basin planning according to the Water Framework Directive and how to ensure that it is successful – the common EC-Member States’ strategy for the implementation of the Water Framework Directive  F. Barth .......................... 23

Overview presentation:
River Basin Planning and management, institutional structures, approaches and results in 5 EU countries and 6 international basins  E. Mostert .............................................. 27

Overview presentation:
Learning from experience – the evolution of river basin management planning in England and Wales over the last 15 years  C. Woolhouse ................................................. 35

Session 2: ‘Integrating’ the different components of River Basin Planning

Component example:
Public Participation in generating and appraising floodplain options: Learning from experience – the ‘EU Wise Use of Floodplains’ Project  J. Cuff .............................. 45

Component example:
Multi-criteria evaluation applied to river basin management  C. Giansante ............. 51

Component example:
Integrating water uses into wider spatial planning – the Emå river project  B. Liedberg Jönsson ................................................................. 59

Session 2bis: Practical Integration of the different components of River Basin Planning

Practical session 1: Public participation and integrated river management: the Rijnwaarden case study, Rhine river basin, The Netherlands

Introduction by project manager  M. Cals ............................................................... 69
The point of view of P. van Seventer ................................................................. 74
The point of view of T. Bäumen ................................................................. 77
Practical session 2: The river Drôme – Water Resources Development and Management Plan: Overcoming water problems in a sub-catchment of the RhôneMéditerranée-Corse basin, France

Introduction by project manager  *D. Jouve* ................................................................. 83
The point of view of  *J. Serret* ................................................................. 87

Session 3: Transboundary river basin planning in the context of the EU Accession Process

*Overview presentation*
The EU Water Framework Directive: Key elements for cross border river basin planning in EU Candidate Countries  *H. Blöch* ................................................................. 91

Practical session 1: Danube River Basin

*Case study presentation*
The role of the International Commission for the Protection of the Danube River (ICPDR) in protecting and managing international waters and ecosystems  *J. Bendow* ................................................................. 95

*Case study presentation*
Public participation in Danube river basin planning: Examples and conclusions from a CEE NGO workshop on ‘Improving Public Participation in Preparations for the Water Framework Directive’  *R. Hauser* ................................................................. 101

*Case study presentation*
Transboundary planning for the sustainable development of the Tisza river basin in the aftermath of toxic mining spills  *K. Morvay* ................................................................. 107

Practical session 2: Baltic Sea Basin

*Case study presentation*
Baltic Sea ‘status’: Marine protection as a driving force for transboundary river basin planning and management  *H. Dissing* ................................................................. 113

*Case study presentation*
Lake Peipsi: A transboundary lake on the EU’s future border  *G. Roll* ............... 117

*Case study presentation*
Poland’s role in securing ‘good status’ for the Baltic  *A. Dembowska* .......... 125

Annex I. List of Participants .................................................................. 129
Annex II. Seminar Programme................................................................ 137
Foreword

The Good Practice in River Basin Planning seminar, organised by the World Wide Fund For Nature (WWF) with support from the European Commission, was the third and final seminar in a series designed to highlight tools and approaches for effective implementation of the EU Water Framework Directive (WFD). The seminar took place in Brussels on 29–30 May 2001 and was attended by more than 120 participants from 22 European countries representing a broad range of different ‘water’ stakeholder groups. Overall, the meeting fully achieved the main objectives of the seminar series:

- The seminar increased transparency and public awareness of some of the key provisions of the WFD, and provided the first major opportunity for international discussions following adoption of its entry into force on 22 December 2000;

- The seminar encouraged the sharing of knowledge, experience and expertise, on existing river basin management planning practices, relevant for implementation of the WFD, looking at both Member States and EU Candidate countries and taking the newly-agreed Common Implementation Strategy for the WFD fully into consideration.

- Elements for a seminar Synthesis Note were discussed during the final session of the seminar. These were based on session-by-session summary reports prepared and presented by a small team of rapporteurs. The full version of the Synthesis Note appears as pages 1–19 of these Proceedings and takes into account all inputs received.

The Synthesis Note is available in Spanish, French and German in a section of the ‘water seminar series’ web page: www.wwffreshwater.org/seminars/seminars.html. The Proceedings also draw together the texts of all the formal presentations made during the seminar. The outputs from this seminar, together with those from the other two meetings in the series (which took place last year), will be used to develop a guidance document providing a practical resource on key elements of integrated river basin management to river basin managers and others as the WFD enters the crucial implementation phase.

We hope that these Proceedings, in particular the Synthesis Note, will be of assistance to all those facing the challenging but vital task of translating the Directive into action.

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1 Your feedback (on the web page information, proceedings etc.) is welcome at any stage, as we are still gathering additional experiences and information for the development of the ‘Practical Resource’ document. Please e-mail your comments to Eva Royo Gelabert at ERoyogela@wwfepo.org
Acknowledgements

The seminar organisers are particularly grateful to the following:

- DG Environment of the European Commission for cooperation in the development of the seminar programme and the list of speakers and participants.

- The European Commission’s Technical Assistance Information Exchange Office (TAIEX) which enabled the participation of stakeholders from EU Accession countries;

- cbe Europe for ensuring the smooth logistical running of the seminar;


- Session Chairpersons: C. Tydeman, A. Gonçalves, E. Jagtman, P-A. Roche, P. Murphy, and P. Kessler.


- Programme Manager: J. Scola;

- Facilitator/Proceedings editor: T. Jones.

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SYNTHESIS NOTE

Contents

1. Background to the Seminar ........................................................................................................ 3

2. The EU Water Framework Directive (WFD) ................................................................................ 4

3. The Common Implementation Strategy (CIS) for the WFD .......................................................... 6

4. Planning for Integrated River Basin Management (IRBM) .......................................................... 7

5. Key IRBM issues and lessons learned from case studies ............................................................ 8
   5.1 Integration .................................................................................................................................. 9
   5.2 Scale ......................................................................................................................................... 10
   5.3 Institutional structures .............................................................................................................. 10
   5.4 Public information, consultation and participation ................................................................. 11
   5.5 Tools and mechanisms to support IRBM ................................................................................. 13
   5.6 Timing and use of resources ................................................................................................... 14
   5.7 Special factors influencing planning for IRBM in EU Candidate countries ......................... 15
   5.8 Conclusions in relation to the ‘Key Questions’ highlighted at the start of the seminar ................ 16

6. The way forward .......................................................................................................................... 17

Appendix

   Figure 1: Overall structure of CIS .......................................................................................... 19
   Figure 2: Organisational arrangement of CIS ........................................................................... 20
1. Background to the Seminar

‘Good Practice in River Basin Planning’ was the third and final seminar in a series designed to promote effective implementation of the European Union Water Framework Directive (WFD). The first two seminars, dealing with ‘Water and Agriculture’ and ‘The Role of Wetlands in River Basin Management’, took place in February and November 2000, respectively.

The seminar dealt with in this Synthesis Note was the first such meeting at EU level since the WFD’s entry into force, and was attended by more than 120 participants from 22 countries (13 EU Member States and 9 Candidate countries), with representatives of national and regional governmental bodies (e.g. environment, water, agriculture and forestry ministries or agencies), the water supply sector, water management and research institutes, farmers’ associations, environmental NGOs (both national and international) and EU institutions, including the European Commission. Participation of EU Accession countries was sponsored by ‘TAIEX’, the European Commission’s Technical Assistance Information Exchange office. The Seminar aimed at:

(a) highlighting existing good practice, and
(b) providing stakeholders with a forum for exchanging ideas and experience.

The programme consisted of a series of keynote presentations, practical case studies and structured discussions (see Annex I to the Proceedings volume). Seven ‘key questions’ for the Seminar presentations and discussions to address were directed at participants at the beginning of the meeting; these are summarised in Box 1. On one level these are very basic questions, but they raise complex issues.

Box 1

Key Questions for the Seminar to Address

- What does planning for integrated river basin management mean?
- What are the main components?
- What needs to be done?
- Who should do what?
- When should it be done?
- What are the main ingredients of success and under which conditions?
- What are the main obstacles and how can these be overcome?

Session 1 examined the concept of integrated river basin planning in a European context, looking specifically at the requirements of the EU Water Framework Directive. Session 2 sought to illustrate the varied types of integration required for effective implementation of river basin planning, while the afternoon of the opening day was devoted to two practical sessions focusing on river basin management for parts of the Rhine and Rhône. These highlighted a number of cross-cutting issues; for example, the need for establishing effective public participation. Session 3, during the morning of day two, continued the case study approach with examples from the Danube and Baltic Sea basins. These demonstrated steps towards transboundary river basin planning in the context of the EU Accession process. The final session centred around presentation and discussion of preliminary conclusions and recommendations, based on presentations by Rapporteurs from each of the preceding sessions.
The full texts of all presentations are contained in the Seminar Proceedings. This Synthesis Note has been prepared to complement the conclusions of the individual papers by summarising the key issues identified, together with the possible approaches and tools available for addressing them, notably in the context of the WFD. The Synthesis Note is structured mainly around the points highlighted during the concluding session of the seminar. However, some participants subsequently contributed additional ideas via e-mail and these have also been taken into account in development of this paper.

The results from all three Seminars in the series are being drawn together in an additional document – due for publication in autumn 2001 – aimed at providing river basin managers with accessible and practical advice on complying with the WFD’s requirements (at least in relation to those aspects of the Directive covered by the Seminars). A small workshop is being held in August 2001 so that invited experts from a range of sectors can contribute their knowledge and experience to the preparation of this ‘practical resource’ document. As underlined at the opening of the Seminar by the Head of the Water Protection Sector at DG Environment of the European Commission, the outputs from the seminar series will form an important contribution to the work of the ‘Best Practice in River Basin Management’ Working Group set up under the Common Implementation Strategy for the WFD (see section 3 below).

For further information on the seminar series, please visit the specially dedicated pages of the WWF European Freshwater Programme’s website at:

www.panda.org/europe/freshwater/seminars/seminars.html

2. The EU Water Framework Directive (WFD)


The WFD represents a fundamental reform of EU water legislation in both environmental and administrative terms. Indeed, if fully implemented, the Directive will be a significant step towards implementation of Sustainable Development within the EU. With the overarching theme of integrated water management at the basin level, its principal objectives (as set out in Article 4) are:

- to prevent any further deterioration in the quantity and quality of all Community waters (i.e. both ground and surface waters, throughout the EU) from the date of the Directive’s publication in the Official Journal (i.e. 22 December 2000);
- to ensure achievement and maintenance of ‘good status’\(^2\) for all Community waters by 2015\(^3\).

\(^2\) The different ‘status’ categories used in the Directive (high, good, moderate etc.) are simply measures of the degree of deviation of a given water body from its original, natural condition, i.e. without human impacts. A Working Group on ‘reference conditions inland surface waters’ has been set up under the Common Implementation Strategy – see section 3.

\(^3\) However, the Directive provides for a range of exceptions, both with regard to the need for achieving ‘good status’ and in terms of the time scale for reaching the environmental objectives.
As its name implies, the Directive establishes a ‘Framework’, providing for a common approach, and common objectives, principles, definitions and basic measures. However, the specific actions required to achieve ‘good status’ are the responsibility of the competent authorities in the Member States (whether national, regional, local, or at the river basin level).

In summary, the WFD (which must be transposed into national law no later than the end of 2003) sets out a phased process, with strict deadlines, for achieving ‘good status’. The key steps with regard to river basin planning are as follows:

- Setting up of River Basin Districts as the fundamental unit for applying the Directive’s provisions. By 2003 at the latest, all river basins and coastal waters must be assigned to a River Basin District (RBD) and the competent authority for each RBD identified. In the case of river basins shared by two or more Member States, International RBDs must be established. If a basin extends beyond Community territory, the relevant Member State(s) must seek to establish appropriate coordination with the non-Member State(s) concerned (WFD Article 3).

- Data gathering and analysis: Article 5 requires that surface- and ground-waters within each RBD must be characterised in accordance with the procedure set out in Annex II of the WFD and by 2004 at the latest. The steps required for each RBD include a review of the environmental impacts arising from human activities. Article 5 also obliges Member States to carry out an economic analysis of water use in each RBD, so that the most cost-effective combination of management measures can be established and the principle of cost recovery for water services applied in the development of water pricing policies. As a complementary step to the characterisation of RBDs, Article 6 requires that a register of protected areas within each RBD, including Natura 2000 sites under the Birds and Habitats Directives, as well as protection zones for drinking water supplies, be established (also by 2004).

- Designing and implementing a ‘programme of measures’ for each RBD: Article 11 requires Members States to establish by 2009 a programme of measures for each RBD composed of both basic and supplementary measures for achieving and/or maintaining ‘good status’. ‘Basic’ measures (set out in Article 11) are compulsory and represent the minimum steps required to achieve ‘good status’. They include the measures required by 11 existing EU water-related Directives (inter alia the Bathing Waters Directive, Drinking Water Directive, Urban Waste Water Directive, Nitrates Directive, Birds Directive and Habitats Directive). ‘Supplementary’ measures are those needed in addition to basic measures if ‘good status’ is to be achieved. The first programme of measures must be drawn up by 2009, to be fully operational by 2012. It must then be reviewed in 2015 and every six years thereafter.

- Preparing River Basin Management Plans: Every Member State must ensure that a River Basin Management Plan (RBMP) is produced for each RBD wholly within its territory (Article 13). This effectively provides the delivery mechanism for the programme of measures described above. In the case of transboundary basins, the Member States concerned must work jointly, with the aim of producing a single International RBMP. If a single plan is not produced, each Member State is responsible for preparing a RBMP for at least the portion of the RBM that lies in its territory. Annex VII sets out the elements that must be covered by each RBMP. The first RBMP must be published at the latest by 2009 and be reviewed in 2015 and every six years thereafter. RBMPs must be submitted to the European Commission within three months of their publication. Progress reports on implementation must be submitted to the Commission within three years of publication (i.e. by 2012).
Establishing monitoring networks: Article 8 requires Member States to establish monitoring programmes “in order to establish a coherent and comprehensive overview of water status within each River Basin District”. Such monitoring must cover both surface- and ground-water, and has to be operational by 2006.

Encouraging the “active involvement of all interested parties” in the implementation of the WFD: Article 14 obliges Member States to ensure inter alia that draft RBMPs are published for public consultation and comment at least one year before the start of the period to which the plan refers.

Amongst the Directive’s other key provisions, which form an integral part of the above process, are:

- Introduction of water pricing policies that provide adequate incentives for efficient use of water taking into account the principle of ‘cost recovery’ for water services, including environmental and resource costs (to be completed by 2010 – see Article 9);
- Control of all pollutant emissions and discharges into surface waters using a ‘combined approach’, based not only on the overall quantity of a given pollutant, but also on its concentration in the receiving aquatic environment (this to be secured by 2012 – see Article 10);
- Specific controls for certain higher risk pollutants on a priority basis, with progressive reduction, phasing out, and/or cessation of emissions, for the substances identified as priorities (first phase-outs or cessations expected within 20 years of adoption of relevant proposals by EU decision-making bodies – see Article 16);

Further information can be obtained by visiting the relevant section of the WWF European Freshwater Programme’s website: www.panda.org/europe/freshwater/initiatives/wfd.html

### 3. The Common Implementation Strategy (CIS) for the WFD

During the opening session of the Seminar, Mr Helmut Blöch, Head of Water Sector within DG Environment of the European Commission, drew participants’ attention to what he termed “a completely new approach to implementation of environmental legislation at European level”. At an informal meeting of EU Water Directors (plus the Norwegian Water Director) held in Paris in October 2000, it had been decided to develop a Common Implementation Strategy (CIS) for the WFD. Following a period of intensive joint work by the Member States and the European Commission, the CIS was adopted at a further Water Directors’ meeting, held in Sweden in May 2001. The Strategy was also discussed with EU Candidate countries, who have been invited to join it.

Further information about the CIS was provided by Mr Friedrich Barth, also representing DG Environment. He outlined the objectives of the CIS as being to improve:

- Coherence and comparability;
- Common understanding and approach;
- Joint efforts and activities;
- Sharing of experience and information;
- Development of guidance;
- Information management; and to
- Limit risks of poor application (especially taking into account the lessons learned from implementation of existing water-related Directives).

The CIS is built around four Key Activities (wording is quoted directly from the CIS text):

- Information sharing;
- Develop guidance on technical issues;
- Information and data management;
- Application, testing and validation (of the guidance mentioned under point 2).

Within the framework of these Key Activities, 10 Working Groups, under the leadership of one or more Member States, have been established. These include a Working Group on ‘best practice in river basin planning’ led by Spain. The overall structure of the CIS and the organisational arrangements are shown in the Appendix (Figures 1 and 2) to this Synthesis Note. Technical guidance is expected to emerge from the CIS process from 2002 onwards.

The Spanish Environment Ministry, which is leading the Working Group on ‘best practice in river basin planning’, made a short presentation to update Seminar participants on the way forward. This confirmed that the Working Group would focus on preparation of technical guidelines for river basin planning and stressed that Members State experts would be working in close co-operation with stakeholders, NGOs and managers from existing River Basin Organisations. Two Technical Conferences for open and public discussion on the proposed issues and draft guidelines were also scheduled. The guidelines themselves were due for completion in 2004 and would then be tested in ‘real-case’ scenarios and validated before 2006. In fulfilling its mandate, the river basin Working Group would need to work closely with other Working Groups under the CIS, for example those dealing with ‘economic analysis’ and ‘analysis of pressures and impacts’. Close links would also be needed with relevant initiatives by civil society organisations.

The full text of the Common Implementation Strategy is available on the publications page of the European Freshwater Programme website: www.panda.org/europe/freshwater/publications#policy

### 4. Planning for Integrated River Basin Management (IRBM)

As emphasised in sections 2 and 3 above, river basin planning is at the heart of the WFD, with River Basin Management Plans (RBMPs) being the procedural means by which Member States must achieve ‘good status’ of all waters by 2015. Box 2 provides a reminder of the key steps and timetable for WFD implementation, highlighting the deadline for publication of RBMPs.

<table>
<thead>
<tr>
<th>Box 2</th>
<th>Deadlines for WFD implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>end 2000</td>
<td>No further deterioration of water status permitted</td>
</tr>
<tr>
<td>end 2003</td>
<td>WFD transposed into national legislation</td>
</tr>
<tr>
<td>end 2003</td>
<td>River Basin Districts identified</td>
</tr>
<tr>
<td>end 2004</td>
<td>Analysis of pressures/impacts/economic use completed</td>
</tr>
<tr>
<td>end 2006</td>
<td>Monitoring programmes operational</td>
</tr>
<tr>
<td>end 2006</td>
<td>Public consultation on RBMP components under way</td>
</tr>
<tr>
<td>end 2009</td>
<td>River Basin Management Plans published</td>
</tr>
<tr>
<td>end 2010</td>
<td>Pricing policies in place</td>
</tr>
<tr>
<td>end 2012</td>
<td>Programme of measures operational</td>
</tr>
<tr>
<td>end 2015</td>
<td>Environmental objectives achieved</td>
</tr>
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</table>
At the global level, several inter-governmental processes over the last twenty years have gradually raised the political profile of integrated river basin approaches to water resource planning. Indeed, one of the key points highlighted by the Seminar was that river basin planning is not something new. On the contrary, there are numerous national, regional and international river basin initiatives already under way in Europe (and elsewhere around the world). Given the tight timetable for WFD implementation, it will be essential that this wealth of existing experience is fully utilised. At international level, some of the most relevant initiatives and processes include:

- The work of transboundary river Commissions such as those for the Danube and Rhine (see www.icpdr.org and www.iksr.org/icpr/index.htm);
- Follow-up to the recent report of the World Commission on Dams (see www.dams.org);
- The World Water Vision launched by the World Water Council at the Second World Water Forum in March 2000 (see www.worldwatercouncil.org/vision.htm);
- The River Basin Initiative of the Convention on Biological Diversity and the ‘Ramsar’ Convention on Wetlands (see www.ramsar.org/w.n.rbi_progress1.htm);
- The Ramsar Convention guidelines on ‘integrating wetland conservation and wise use into river basin management’ available in English, French and Spanish (see www.ramsar.org/key_guidelines_index.htm).

The River Basin Management Plans required by the WFD are strategic in nature but action-oriented and focused on results. It is essential that the difference between ‘planning’ and actual ‘management’ is emphasised throughout the process; plans are of little value if they just sit on the shelf gathering dust. In a similar vein, it is important to recognise the difference between ‘basic compliance’ with the minimum requirements of the WFD on one hand, and achieving more sustainable water management by fully meeting the Directive’s environmental objectives on the other. There will be a crucial role for civil society to ensure that Member States do not take the ‘lowest common denominator’ approach, which has characterised implementation of other recent EU environmental legislation such as the Nitrates Directive or Habitats Directive.

The case studies presented during the Seminar demonstrated a wealth of experience which could very usefully be taken up by the Working Group on ‘best practice in river basin planning’ established under the Common Implementation Strategy, and be used as examples, models and sources of ideas for all those involved in implementing the WFD. These are summarised below.

5. Key IRBM issues and lessons learned from the case studies

While the WFD sets out a legally binding framework with clearly fixed objectives and enforceable deadlines, there is considerable scope for flexibility. This allows Member States and the designated ‘competent authority’ for each River Basin District to select the most appropriate approaches, tools and processes from the wide range on offer. Some of the key issues and lessons learned, which may serve to guide the selection process, are summarised below under the headings of: Integration; Scale; Institutional structures; Public information, consultation and participation; Tools and mechanisms; Timing and use of resources; and Special factors for EU Candidate countries.
5.1 Integration:

(This theme was addressed to some extent by all papers presented at the Seminar.) Experience to date shows that while the river basin is widely accepted amongst hydrologists, land-use planners, environmental bodies and the water supply sector as the logical unit for water resource management, successful integrated river basin management continues to be elusive. Integration at the national or river basin level implies the need for:

- Improving consultation and cooperation within the water sector;
- Integrating approaches to surface- and ground-water management – a challenge that will be particularly difficult in karst regions (NB a ‘daughter Directive’ on groundwater protection will be prepared, with both qualitative and quantitative elements for defining ‘good status’, together with criteria for identifying and assessing pollution trends, as required by the WFD);
- Consulting, cooperating with and involving other sectors and stakeholders (e.g. agriculture, industry, transport, tourism & recreation); working coherently at different spatial scales (e.g. from a River Basin District, to a sub-basin, to an individual water course or wetland);
- Giving particular attention to integrating the approach required by the WFD with traditional approaches to water and land-use planning;
- Informing and consulting (a) the general public, (b) NGOs and other stakeholders, and providing meaningful opportunities for their active participation;
- Ensuring coherence between implementation of the WFD and existing bilateral and multilateral processes (e.g. river basin Commissions, bilateral water treaties, water-related Conventions).

At the EU level, integration implies the need for coherence between the major policy and financial instruments that are the driving forces behind current land- and water-use practices within the territory of the Member States and, increasingly, in EU Candidate countries. This has been a common thread throughout the WWF-EC Seminar series. For example, presentations made during the first Seminar showed the clear need to review and reform the Common Agricultural Policy if the environmental objectives of the WFD are to be met. In the meantime, much better use could be made of existing instruments, some of which – e.g. measures under the Rural Development Regulation – are optional and not adequately taken up by Member States. Gaps in coherence between EU policies and financial instruments were also highlighted by a paper on policy aspects of the ‘Wise Use of Floodplains EC LIFE project’, presented at the second Seminar. This showed that the obstacles to sustainable water management posed by the CAP, Structural Funds and Cohesion Fund (and their counterpart mechanisms for EU Candidate countries) significantly outweigh the opportunities provided.

The successful development and implementation of river basin planning under the WFD will depend very considerably on the extent to which true integration is achieved at all the levels highlighted above.

Brussels, 29–30 May 2001
5.2 Scale:

(See particularly the papers presented in Session 1 by C. Woolhouse; in Session 2 by B. Liedberg Jönsson; and in Session 3 by A. Dembowska, H. Dissing, K. Morvay and G. Roll – refer to Seminar Proceedings.)

- The WFD requires that RBMPs be delivered at the river basin district (RBD) scale. However, it is essential to recognise that the scale of river basins – and hence RBDs – varies enormously within and between countries.

- Effort and resources should not be wasted in trying to develop an extremely detailed ‘grand design’ for a very large RBD. Instead, the detailed characterisation and planning work should be carried out at the most practical level – generally the sub-basin level (e.g. as in the case of the Emå River Project presented in Session 2 by B. Liedberg Jönsson), though further division may be needed for larger sub-basins. However, producing the overall RBMP for the RBD concerned is not simply a question of collecting together a disparate set of sub-basin plans together under a single title page. A parallel synthesis process, with continuous coordination and integration of ‘top–down’ and ‘bottom–up’ approaches, will be required to ensure that the aggregated plans can together deliver the WFD’s environmental objectives. The resulting ‘front end’ at RBD level should be clear and concise, avoiding lengthy technical detail.

- Tools and approaches piloted at a relatively small scale can be adapted for wider use, though it is not always feasible to ‘scale up’ an approach that has worked successfully at a local level (e.g. blanket consultation of local communities). The emphasis should be on development of common ‘guiding principles’, while retaining sufficient sensitivity and flexibility for application to differing local circumstances.

- Delivery of holistic, participatory plans for large areas will require every plan to have a very strong leader or ‘champion’, to constantly move the process forward without losing stakeholders along the way. The larger the scale, the bigger the challenge facing the lead agency.

5.3 Institutional structures

(See especially the paper presented in Session 1 by E. Mostert, in Session 2bis by D. Jouve, in Session 3 by J. Bendow.)

- The analysis presented by E. Mostert showed that across the EU there is currently a wide variety of institutional structures for water resource management. Nevertheless, these can be divided into two broad groups:

  - ‘hydrological model’ where competence for planning and management is established strictly on the basis of hydrological boundaries, leading to the establishment of river basin authorities (or similar);

  - ‘coordination model’ where the competent institutions are not based on hydrological (i.e. river basin) units but can coordinate with each other to plan and implement river basin management. International river basin Commissions can be seen as examples of this model.
• The role of external coordination bodies, such as river basin Commissions, was highlighted as a means of enabling countries with little or no tradition of constructive cooperation to work together on water management issues. However, Commissions do not have true powers of enforcement.

• Provided that there is adequate coordination and integration, both models can work successfully. Given the multiplicity of long-established structures in many countries, it may be more practical and realistic to invest resources into strengthening cooperation, rather than in setting entirely new structures that might only work at the theoretical level.

• It is essential to have clarity over roles and responsibilities at all levels. This should be checked at each stage of the process, from the identification of competent authorities for RBDs, through to the programme of measures and the RBMP itself. In particular, a clear mechanism for decision making – that is easily understood by all participants – is needed.

5.4 Public information, consultation and participation

(See particularly the papers presented in Session 2 by J. Cuff; in Session 2bis by M. Cals, P. van Seventer and T. Bäumen; and in Session 3 by R. Hauser.)

This was perhaps the dominant theme to emerge from the Seminar, even though the Programme had not been designed with this result in mind, it being anticipated that only three presentations would deal specifically with participation issues. An overwhelming majority of presentations and discussion sessions highlighted public information, consultation and participation as one of the most important areas to get right if implementation of the WFD is to succeed.

• Under the heading of “Public information and consultation”, Article 14 of the WFD requires Member States to “encourage the active participation of all interested parties”. Specific obligations include the publishing and making available for comment of the following:
  
  – Timetable, work programme and consultation measures for RBMP production (at least 3 years before the start of the period to which the RBMP applies, i.e. by 2006, since RBMPs must be published by 2009 at the latest);
  – Interim overview of significant water management issues identified (at least 2 years before RBMP is due to be operational, i.e. by 2007 at the latest);
  – Draft copies of the RBMP (at least one year before it becomes operational, i.e. by 2008 at the latest).

• As noted above, Article 14 refers to ‘information’, ‘consultation’ and ‘participation’. It is essential to recognise that these three terms are fundamentally different and should never be used interchangeably. While provision of information – if carried out in an open and timely fashion – is an important first step, it does not constitute ‘participation’ which implies an interactive process. Similarly, ‘consultation’ may be conducted in a manner that provides little or no opportunity for consultees to have real participation and influence in planning or decision-making processes.

• As pointed out several times during the Seminar, a number of fundamental questions are not answered explicitly by the Directive text, for example: ‘what is the purpose of public participation?’, and ‘how should public participation be achieved in practice?’ If implementation of Article 14 is not to be seen as superficial (i.e. consultation
without any real engagement with stakeholders), it is essential that these questions are asked at the earliest stages of RBMP preparation. Member States have an important opportunity to build on Article 14 when they transpose the WFD into national law – especially taking into account the requirements of the 1998 ‘Århus’ Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. This will facilitate inter alia:

- Real participatory approaches to implementation of the WFD;
- Clarification of ‘significant’ versus ‘non-significant’ water management issues at the river basin level;
- Conflict resolution;
- Development of realistic and enforceable measures to achieve ‘good status’;
- Lower implementation costs;
- ‘Enforceability’ (see below).

• In the prevailing social and political context of EU Member States, it is highly unlikely that RBMPs can be implemented successfully if they do not meet with broad public acceptance and, in particular, if they are not supported by key groups within a basin, including local residents and sectoral land/water users. Early provision of transparent and accessible information, together with genuine opportunities for participation in planning and decision-making mechanisms increase the chances of success.

• Effective public consultation and participation at a local level can help to ensure that the knowledge, experience, aspirations and concerns of local communities are built into a management plan from the beginning.

• It is important to recognise that different components of ‘the public’ will have their own views, needs, priorities and expectations. In order to be successful, information, consultation and participation processes need to be tailored for particular target groups. These may include: the ‘general’ public, NGOs, sectoral stakeholder groups within a basin or sub-basin (e.g. farmers’ associations), and local residents. Special interest groups might be expected to participate at a more strategic level, e.g. through representation in basin advisory committees, whereas local communities are more likely to seek and value participation at the field/action programme level.

• Intelligent targeting of interest groups can also help to reduce the danger of ‘consultation fatigue’ where stakeholders feel overwhelmed by information and perceived bureaucracy. On the contrary, there should be tangible and demonstrable benefits for participants.

• Working with interest groups also raises issues of legitimate representation. In the interests of openness and democracy it is important that ‘umbrella groups’ clearly set out and justify the extent to which they are representative of a particular constituency.

• While the WFD text requires public consultation to have been initiated by 2006, implementation of the Directive will benefit greatly if public information, consultation and participation are fully integrated right from the beginning (i.e. this is also an issue of Timing – see section 5.6), as for example in the Rijnwaarden project presented in Session 2bis by M. Cals, P. van Seventer and T. Bäumen.
• Information, consultation and participation can have simultaneous top-down and bottom-up components, but there should be adequate coordination to ensure that the two processes meet at some point.

• Participation does not just happen. On the contrary, it must be actively encouraged and river basin authorities must be prepared to devote time to careful planning and to invest meaningful financial and human resources. Such investment has the potential to be extremely cost-effective in terms of the benefits derived for WFD implementation.

• Expectations must be managed carefully. It is essential not to promise more than can be delivered; otherwise public interest and support will at best evaporate, or, at worst, be transformed into active hostility. In this respect, it is particularly important to distinguish between consultation and involvement at the planning phase, and consultation and involvement at the decision-making and implementation stages. The parameters of participation must be clear for all parties involved.

• Participation is a cross-cutting issue for the WFD. The Common Implementation Strategy should include a specific and independent Working Group dealing with all aspects of public participation.

5.5 Tools and mechanisms to support IRBM

(See particularly the paper presented in Session 2 by C. Giansante.)

Given the limited time available, the Seminar did not address in detail the field implementation of specific tools and mechanisms\(^4\), instead focusing on approaches to identifying and selecting appropriate tools. The following points emerged from the presentations and discussion:

• Many river basins in Europe are covered wholly or in part by a range of water-related agencies and companies in the public and private sectors, each of which is liable to be using a different set of tools. Development of a programme of measures and preparation of an RBMP are the mechanisms through which the use of these tools can be coordinated and evaluated in a basin context.

• The tools selected for inclusion the Programme of Measures should be adapted to the key issues/problems identified during the characterisation and analysis of each RBD; it is not possible to produce a ‘one size fits all’ check list of tools to be applied. While evaluation of tools forms part of the WFD process, institutional inertia, combined with budget limitations, may encourage maintenance of the status quo and limit openness to innovative approaches.

• Conversely, it is important to avoid ‘reinventing the wheel’. Hence, for example, in the case of the Baltic Basin, tools and approaches already developed in the framework of Integrated Coastal Zone Management can be used. From 1996 to 1999 the European Commission operated an ICZM Demonstration Programme designed around a series of 35 demonstration projects and six thematic studies. This led to the adoption in 2000 of a Communication from the Commission to the Council and European Parliament on ‘ICZM: A Strategy for Europe’ (COM/00/547), together with

\(^4\) i.e. the individual planning or management techniques that together comprise the programme of measures.
a proposal for a Parliament and Council ‘Recommendation concerning implementation of ICZM in Europe’ (COM/00/545). The latter document outlines steps which Member States should take in developing national ICZM strategies. Outputs from the Demonstration Programme are available at:

www.europa.eu.int/comm/environment/iczm/demopgm.htm

• The seminar presentations demonstrated a variety of tools that can be used for public information, consultation and participation. For example, in the framework of the EC LIFE ‘Wise Use of Floodplains’ project, these have ranged from interviews in local shopping centres to the use of large-scale polystyrene basin models on which stakeholders were asked to flag key issues or concerns with pins and stickers (see paper by J. Cuff in the Seminar Proceedings). However, ‘participation’ is one of the WFD components where tools and approaches that work in one basin are unlikely to transfer easily to another basin in the same region, let alone in another Member State. It is important that local factors of culture and tradition are taken into account, though this must not be used to defend continued official secretiveness in countries where public participation has traditionally been limited.

• A balance is needed between regulatory and voluntary mechanisms. While it is generally easier to achieve consensus through voluntary agreements, some kind of legislative framework is always required for enforcement to be an effective option if and when voluntary approaches break down under certain circumstances.

• Effective sharing of good practice can reduce costs and time scales.

• Theoretical simulations (such as the multivariate analytical tool presented by C. Giansante) can provide a useful approach for conflict solution among stakeholder groups with widely differing interests. However, the results obtained from simulations should be supported by field testing.

5.6 Timing and use of resources

• Until now, action to improve European river basin management has often only been triggered by catastrophic pollution incidents, such as the 1970s Sandoz disaster on the upper Rhine, as well as the more recent releases of toxic mining waste which affected the Doñana region of Spain and the Tisza river and its tributaries in Romania, Hungary and the Federal Republic of Yugoslavia. The near-disastrous flooding of the lower Rhine in the early 1990s prompted a similar flurry of river management activity in The Netherlands and Germany. The WFD provides the opportunity for putting into place properly planned, long-term water management measures that should help to minimise (or at least better respond to) future disasters and their costly primary and secondary consequences.

• Implementation of the WFD must begin immediately. The timetable is challenging and time cannot be wasted in endless ‘planning for river basin planning’. While recognising that effective river basin management requires time and effort, the competent authorities should be prepared to start ‘early but imperfectly’, building knowledge and experience along the way. Furthermore, the current trend for water and wetland deterioration in Europe must be halted and reversed in order to achieve ‘good status’ for all waters by 2015.
• The process of producing River Basin Management Plans is aimed at action; it is not an end in itself. The WFD goes beyond ‘process’ obligations and has clear ‘result’ obligations for each RBD, namely the prevention of further deterioration and the achievement of ‘good status’ by 2015. The challenging time scale means that existing structures, processes and experience must be harnessed wherever possible.

• Similarly, by keeping administrative planning to a minimum, resources can be directed to field action and the interest of stakeholders and users is more likely to be retained.

• Priority should be given to delivering some initial results ‘on the ground’ as quickly as possible – again with the aim of building interest and support among stakeholders.

5.7 Special factors influencing planning for IRBM in EU Candidate countries

(See especially the papers presented in Session 3)

• EU Accession is the overall driving force for environmental policy development and management in Central and Eastern Europe. The WFD is therefore a crucial political and administrative instrument for achieving integration.

• The requirements of the WFD will be binding on Candidate countries from the moment of their accession to the EU. This presents a special challenge to these countries which will have to meet the same deadlines as Member States.

• Many basins in the region are extremely large, requiring considerable transboundary cooperation with other EU Candidate countries, with existing Member States, and with other European countries such as Belarus, the Russian Federation and Ukraine.

• There is a considerable body of technical and scientific expertise in the region, but economic problems have prevented or severely reduced the extent to which this expertise can be implemented at field level.

• There are major disparities in levels of water services provision between Member States and EU Candidate countries. For example, almost one in four of the population in the Danube basin is not connected to a public water supply and half are not connected to sewage services. As might be expected, the vast majority of the people without access to adequate water services live in the former ‘eastern bloc’, where implementation of the WFD will require huge investment, notably for waste water management. While upstream countries such as Germany and Austria have an annual per capita GDP of >20,000 USD, the corresponding figure for Moldova is <1,000 USD.

• The Danube is benefiting from a five-year nutrient-reduction programme costing 5 billion Euros, with financial contributions from the United Nations Development Programme (UNDP)/Global Environment Facility (GEF), the International Commission for the Protection of the Danube River (ICPDR), the European Bank for Reconstruction and Development (EBRD) and the EU. However, a heavy financial burden still falls on the countries of the lower Danube as they struggle to implement the existing water component of the EU environmental acquis.

• Most rivers of the region terminate in sensitive regional seas (i.e. the Adriatic, Aegean, Baltic and Black Seas). The ecological problems facing these water bodies...
highlight the need for implementation of the WFD to ensure delivery of the objectives of the ‘emissions Directives’ (i.e. Nitrates and Urban Waste Waters).

• Pilot testing of the guidelines for WFD implementation produced under the Common Implementation Strategy will take place in EU Candidate countries as well as in Member States. However, seminar participants from the region pointed out the need for capacity building – for instance to tackle gaps in expertise in the fields of policy and legislation – particularly among NGOs. These and other gaps in experience and expertise, in spite of the high scientific standards in the region, could inhibit effective stakeholder participation. This should be taken into account during development of the CIS.

• While acknowledged as a requirement of the WFD, the benefits of public participation have not yet been taken on board seriously by governmental bodies in much of the region. Furthermore, with some exceptions, NGOs are much less well-resourced and organised than their counterparts in Member States. While they have good proposals for public participation under the WFD, they face difficulties in having these proposals recognised officially.

• The strengthening of border restrictions between the EU Candidate countries and non-Candidate countries of Eastern Europe will pose special challenges to successful transboundary basin management in the future.

5.8 Conclusions in relation to the ‘Key Questions’ highlighted at the start of the Seminar

• What does planning for integrated river basin management mean?

‘Planning for river basin management’ has four clear elements, all of which are required in the context of WFD implementation:

– ‘Planning’: a rigorous framework in pursuit of long-term goals, namely the environmental objectives of the WFD;
– ‘Integrated’: there must be a wide range of genuine interactions within and between sectors and stakeholders and at different spatial, temporal and institutional levels (see Section 5.1);
– ‘River basin’: recognition that water resources are most appropriately managed at the basin (or component sub-basin) level;
– ‘Management’: the need to orient planning towards practical, field-level actions.

• What are the main components? What needs to be done?

– The WFD sets out clear steps, as highlighted in Section 2. The central elements are the River Basin Management Plan and the corresponding programme of measures for each River Basin District;
– These further require the setting up of effective information gathering and analysis mechanisms, appropriate monitoring networks, and genuine opportunities for stakeholder information, consultation and participation

• Who should do what?

– Different actors are relevant at different scales;
– Roles and responsibilities should be clearly defined and mutually respected;
Strong and effective coordination is required to ensure that the elements of river basin planning and management being pursued and implemented by different actors are coherent at sub-basin and River Basin District levels (i.e. this is the role of the competent authorities designated by the Member States).

**When should it be done?**
- The WFD establishes a clear series of legally binding deadlines;
- The challenging timeframe means that actual implementation must begin as rapidly as possible, based on existing information, experience, structures and processes;
- However, early implementation must constantly be reviewed and adapted in the light of additional data gathering and lessons learned, with genuine openness to innovative approaches;
- Public information, consultation and participation should be incorporated from the earliest stages of WFD implementation.

**What are the main ingredients of success and under which conditions?**

Successful examples tend to be characterised by:
- Step-by-step approach;
- Pragmatism;
- Openness and commitment to public information, consultation and participation;
- Commitment to awareness raising and capacity building (at all levels);
- Innovative thinking.

**What are the main obstacles and how can these be overcome?**

On the other hand, factors associated with less successful efforts include:
- Poor communication, both within the water sector and with other stakeholders;
- Technical perfectionism;
- Institutional inertia;
- Non-existent or superficial involvement of stakeholders;
- Underestimating the human and financial resources required.

### 6. The way forward

As indicated in the introductory section of this *Synthesis Note*, the conclusions and recommendations of the three WWF/EC ‘water seminars’ to assist implementation of the Water Framework Directive will be brought together in a single document intended as a practical resource for river basin planners and managers. This will be published in the autumn of 2001, following a small expert workshop to be held near Brussels in August 2001.

In addition, it is hoped that the findings of the Seminar series will be taken forward through the WFD Common Implementation Strategy. In particular, the outputs of the third seminar can contribute to the Working Group on ‘best practice in river basin management’ by highlighting the key issues for inclusion in the technical guidance to be prepared by the group. As a first step, representatives of WWF met with the Spanish Environment Ministry, the European Commission and other members of the Working Group in mid-July 2001 to present this *Synthesis Note*.

One of the clear messages from the Seminar was the need for the Common Implementation Strategy to treat public participation as a cross-cutting issue that cannot be dealt with by the
Working Group on river basin management alone. During discussion, representatives of the Commission undertook to revisit this issue.

Further attention also needs to be directed at developing the actual tools for delivering river basin planning. These have so far received relatively little attention, but this is bound to change rapidly as Member States are faced with having to deliver on implementation products and deadlines.

In view of the above, WWF strongly recommends that all of the key issues highlighted in this paper be fed into the Common Implementation Strategy process, and that corresponding technical guidance and pilot basin results are made widely available, as rapidly as possible, to all those involved in delivering the WFD’s environmental objectives.
Key Activity 1
Sharing Information

1.1 Tools for information sharing
1.2 Raising awareness

Key Activity 2
Develop guidance

2.1 Analysis of pressures and impacts
2.2 Heavily modified water bodies
2.3 Reference conditions inland surface waters
2.4 Typology, classification of transitional, coastal waters
2.5 Intercalibration
2.6 Economic analysis
2.7 Monitoring
2.8 Tools on assessment, classification of groundwater
2.9 Best practices in river basin planning

Key Activity 3
Information Management

3. Geographical Information Systems

Key Activity 4
Application, testing and validation

4.1 Integrated testing in pilot river basins

Annex II: Figure 1
Overall structure of CIS
Water Directors
Steering of implementation process
Chair: Presidency, Co-chair: Commission

Strategic Co-ordination group
Co-ordination of work programme
Chair: Commission

Working Group
Analysis of pressures and impacts
Lead: UK, Germany

Working Group
Reference conditions inland surface waters
Lead: Sweden

Working Group
Typology, classification of transitional, coastal waters
Lead: UK, Spain, EEA

Working Group
Heavily modified water bodies
Lead: Germany, UK

Working Group
Geographical Information Systems
Lead: JRC Ispra

Working Group
Intercalibration
Lead: JRC Ispra

Working Group
Monitoring
Lead: Italy, EEA

Working Group
Economic analysis
Lead: France, Commission

Working Group
Tools on assessment, classification of Groundwater
Lead: Austria

Working Group
Best practice in river basin planning
Lead: Spain

Stakeholders, NGO’s, Experts, etc.

Expert Advisory Forum
Priority Substances
Chair: Commission

Expert Advisory Forum
Groundwater
Chair: Commission
MS, Candidate countries, experts, stakeholders, NGO’s

Expert Advisory Forum
Reporting
Chair: Commission
Session 1:

Integrated River Basin Planning in Europe and the Water Framework Directive
OVERVIEW PRESENTATION

Integrated River Basin Planning according to the Water Framework Directive and how to ensure that it is successful: the Common EC-Member States’ Strategy for Implementation of the Water Framework Directive

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1. Requirements

The Water Framework Directive sets the legal framework for integrated river basin planning and establishes it as the key instrument for water management. The Water Framework Directive is a breakthrough for European water management partly because the old sectorial management approaches and the management approaches based on administrative borders are left behind.

The principal area/unit for water management is the River Basin District. River Basin Districts may combine several river basins. A river basin is defined by hydrological properties as a natural hydrological basin with an outlet to the sea. The planning process required by the Directive is the process instrument to prevent deterioration of the water status and to achieve a good water status for all European waters by 2015. The objectives are binding and enforceable ‘result obligations’ while the different steps of river basin management, as required by the Directive, are ‘process obligations’. The planning process is divided into four major steps:

- Identification of the River Basin District and the administrative arrangements including the competent authorities and the arrangements for co-ordination
- Characterisation of the district and analysis of pressures and impacts on the status of all surface water and groundwater bodies including an economic analysis of the water uses
- Establishment of representative monitoring of the water status
- Design of the River Basin Management plans including the programme of measures to reach the objectives of the Directive

The development of the river basin management plan is subject to public participation. The river basin management plan is not only a planning instrument but also the reporting instrument to the European Commission. The most important part of this plans are the programme of measures where the Member States have to demonstrate in a transparent and coherent way how they plan to reach the objectives of Directive. The programme of measures has to include a wide range of existing legislation and is an important tool for integration. Within the plan Member States also have to demonstrate the outcome of the public participation process.

2. Challenges

The Water Framework Directive is one of the most demanding and complicated environmental Directives ever adopted by the European Union. Its implementation raises a number of challenges:
The text of the Directive is complex and leaves room for many different approaches to implementation. In order to ensure an efficient, coherent and comparable implementation the development of a common understanding, of common approaches and methodologies as well as common guidance documents is required.

- The Directive requires the integration of the technical and scientific approaches to water management with the economic approaches in order to ensure a better efficiency of water management and to develop the necessary incentives for a more sustainable water use. Water managers and economists need together to develop the necessary tools and methodologies.

- The Directive requires an integrated ecological assessment of the status of all surface waters. The technical and scientific tools to ensure a comparable assessment and classification are not available on the market and need to be developed.

- The river basin planning process is a long way to go and raises a number of management challenges. Water managers might get lost and might consider the process itself as an objective. In order to focus the process on the programme of measures and the environmental objectives of the Directive specific tools and approaches have to be developed.

- Public participation is traditionally considered by water managers as a burden rather than an opportunity. Moreover, the Directive requires participation rather late in the planning process but many experiences have shown that early participation is more efficient and successful than late participation.

- River basin management in large international river basins like the Danube and the Rhine raises a number of questions for international co-ordination and specific challenges for the methodologies and approaches because of many different management scales within one basin. In the Danube river basin the diversity of the economic situation of the riparian states and the enlargement process adds further challenges to this.

### 3. Common Implementation Strategy for the WFD

Member States and the European Commission have jointly analysed the challenges and have developed a Common Implementation Strategy for the Water Framework Directive. Only five months after the adoption of the Directive the Member States and the European Commission reached agreement on a strategic document as a basis for the joint implementation process.

The strategy identifies four Key Activities:

- Information sharing
- Development of guidance
- Information management
- Evaluation and testing in pilot river basins

The key activities are divided into projects and for each project a specific project sheet was developed. The establishment of 10 working groups was agreed. The working groups are responsible for the projects and will be led by a lead country or the European Commission. They will be co-ordinated by a strategic co-ordination group (lead European Commission) which will report to the European Water Directors. Moreover, three expert advisory fora will be created by the European Commission for the development of the daughter directives on groundwater and priority substances and for streamlining of the reporting obligations.
The involvement of stakeholders and NGO’s as well as independent experts is recognised as an important element in the implementation strategy. Moreover, the involvement of candidate countries will be ensured. The working groups have already started or will start in the near future and they will work under a high pressure because of the demanding timetable of the Directive.

The implementation strategy is a completely new and challenging process on an informal basis and can only be successful on the basis of mutual trust of all partners.

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OVERVIEW PRESENTATION

River Basin Planning And Management:
institutional structures, approaches and results
in five EU countries and six international basins

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Summary

This paper gives an overview of river basin management (rbm) in Europe. Two institutional models are identified: the authorities model (water management by independent river basin authorities), and the commission model (water management by ordinary government bodies that co-operate in river basin commissions). Moreover, this paper presents the different management instruments and discusses the effectiveness of rbm. The paper argues that river basin authorities are not always the best option for rbm. Furthermore, the paper emphasises the importance of public participation and the need to gain insight in the different national attitudes towards and experiences with public participation.

1. Introduction

River basins are important management units. They are the natural context in which freshwater occurs, the source of nearly all water used, and the receptors of most wastewater. Moreover, they have important non-consumptive uses, such as recreation, nature and fishing. Consequently, effective river basin management (rbm) is imperative.

This paper presents the diversity of rbm practices in Europe. It discusses the rbm institutions in five EU countries (France, Germany, The Netherlands, Portugal and England and Wales) and six international basins (the Rhine, Meuse and Scheldt and the Portuguese-Spanish rivers). (§ 2) Moreover, it presents the different instruments that are used and assesses the effectiveness of rbm. (§§ 3 and 4) Finally, it distils points for discussion (§ 5)

This paper is based on research conducted in ‘Eurowater’ and the ‘Water 21’ project, a collaborative research project with teams from France (LATTIS), Germany (Ecologic), the Netherlands (RBA Centre, TU Delft), Portugal (IST) and the United Kingdom (WRC). (Correia 1998, Mostert ed. 1999) Both projects were funded by the Environment Research Programme managed by the European Commission, DG Research, with additional funding from national organisations. The research partners provided much of the information on which this paper is based and also gave comments on an earlier version.

2. River basin management institutions

France

In France six river basin institutions have been set up, the so-called Agences de l’Eau (Water Agencies). The Agences levy pollution and abstraction charges, grant subsidies for reducing pollution, and formulate a Water Development and Management Master Plan (SDAGE). They have no regulatory powers nor do they own or operate infrastructure. Regulation is the responsibility of

¹ Homepage: [http://www.ct.tudelft.nl/rba/rba.htm](http://www.ct.tudelft.nl/rba/rba.htm)
the regional directorates of the Ministry of Environment and the departmental offices of four other ministries. The departmental offices are also responsible for the large-scale infrastructure. The municipalities are responsible for drinking water supply and sewage treatment, which they often contract out to the water industry.

For sub-basins, detailed Water Development and Management Plans can be formulated (SAGE). These plans are drawn up by so-called Local Water Commissions, which are especially set up for this purpose. Both the Local Water Commissions and the board of the Agences de l'Eau consist of representatives of national government, local governments and the different user groups.

**Germany**

In Germany water management is more decentralised. Most competencies are at the Land (State) level. Within the sixteen Länder tasks and competencies are usually decentralised to regional governments. Municipalities are responsible for water supply and sewerage services. Other operational tasks, such as drainage, flood protection and river maintenance, are executed either by municipalities or by water management associations The task of the federal government is limited to concluding water treaties or other International or European water policy, to framework legislation, such as the Federal Water Management Act, and to the administration of federal waterways.

The Act on Water Management provides for – not obligatory – river basin planning (wasserwirtschaftliche Rahmenpläne), but most Länder do not use this instrument. The management of river basins is based primarily on working groups. E.g. for the Rhine there is a working group of the Rhine-Länder (the ARGE Rhein) and a commission of the Rhine-Länder and the federal government (the German Commission for the Protection of the Rhine against Pollution). The latter provides the German input in the International Rhine Commission. Moreover, cooperation takes place in the Länder Water Working Group (LAWA) and in different professional organisations.

**The Netherlands**

In The Netherlands water management responsibilities are divided over the different government levels. National government is responsible for the national policy and the legislative framework and for the management of the largest waters. The 12 provinces are responsible for groundwater management and for supervising the waterboards. The 57 waterboards are responsible for the management of most surface waters and for sewage treatment. The most important water management task of the 537 municipalities is sewage collection. Planning plays a central role at all levels, but most planning is not based on river basins or comparable water management units. Water users are involved in the waterboards, in divers advisory boards, and increasingly through participatory planning processes.

**Portugal**

The institutional development in Portugal concerning water management has been rather turbulent. Since 1994, the main governmental actors are the Institute for Water (INAG), a sectoral institute of the Ministry of Environment, and the Regional Directorates of Environment (DRAs) of the same ministry. The INAG is responsible for drafting the National Water Plan and river basin plans for four transboundary river basins. In addition, it is the permitting authority for many water uses. The DRAs are responsible for drafting and implementing the river basin plans for the 11 national river basin districts. Furthermore, they are responsible for the implementation of the policies set forth by the INAG. Several governmental and non-governmental bodies participate in the planning process through river basin councils. The bodies represented in these councils include official departments, such as agriculture, industry and public health, industry associations, farmers’ associations, environmental associations and professional organisations.
**United Kingdom (England and Wales)**

In the United Kingdom river basin management is the responsibility of the Environment Agency (EA), the successor of the NRA. Its tasks with respect to water are to protect and improve the water environment and provide protection against flooding from rivers and the sea. The EA operates a system of abstraction licenses and discharge consents. Moreover, it formulates so-called LEAPs (Local Environment Agency Plans), which are based on catchments. The LEAPs have no binding force, but they form a point of reference for decision making and ensure that the rationale for decision making becomes transparent. Important elements of the LEAP process are the analysis of the state of the waters (quantity, quality, demands) and consultation with both user groups and government bodies. To co-ordinate with land-use planning, the EA consults the local governments. Furthermore, it has issued ‘guidance notes for local planning authorities on the methods on protecting the water environment through development plans’, based on a partnership approach.

**The Rhine, Meuse and Scheldt basin**

The international rivers in Europe are managed primarily by the different basin states. However, they increasingly co-operate with each other. In the Rhine, the Meuse and the Scheldt basin (as well as in many other European basins) river basin commissions have been set up for this purpose. They co-ordinate monitoring and research and function as a discussion forum for international water management issues. They have no independent decision-making powers and have a limited scope in geographical as well as functional terms. Except for the Scheldt basin, some basin states are not a member of the commission. Moreover, the aim of the Scheldt and the Meuse commissions is water quality in the main stem, although measures to improve the quality may refer to the whole basin. The Rhine Commission has a broader scope, since it also deals with ecology and flooding, but this commission too focuses on the main stem only. Other issues and other parts of the basin are discussed mostly bilaterally, e.g. in the German-Dutch boundary waters commission and its sub-commissions for specific waters, or in the Meuse working group on low water flows. All three commissions have prepared action plans, which have been adopted by the pertinent ministers of the different basin states.

**The Iberian basins**

The situation on the Iberian Peninsula is slightly different. International co-operation on water management issues started already in 1927 on hydropower issues in boundary stretches of international rivers. A commission was set up to supervise implementation and a conflict resolution procedure was put in place, including an arbitration commission. This system worked effectively, but new issues such as potential water shortages and pollution were not addressed. Late 1998, however, Portugal and Spain signed a new convention, which pays integral attention to water quality and quantity and set up a new commission with more powers than the Rhine, Meuse and Scheldt commissions. Moreover, it contains a conflict resolution procedure involving a court of arbitration. The convention contains no final agreement on the most critical issue: water allocation in times of low flow.

**Two models**

Rbm in Europe can be analysed using two models. In the ‘authority model’ water management is a separate policy sector, organised on the basis of hydrological boundaries. Water management is the task of river basin authorities with independent decision-making powers and independent financing. In the ‘commission model’ water management is the responsibility of general government bodies that also deal with environmental management, land use planning and agricultural policy. These bodies do not follow hydrological boundaries. Transboundary issues are handled by means of intergovernmental co-ordination and co-operation, often in the framework of river basin commissions. Such commissions do not have independent decision-making powers, but they often prepare policy plans or strategic action plans. Detailed operational rbm planning is more a task for river basin authorities and other bodies with operational rbm tasks.
Both models have advantages and disadvantages. The authority model offers the best opportunities for integration within the water resources sector (surface and groundwater quantity and quality) across administrative boundaries. The commission model, on the other hand, offers the best possibilities for integration between the water resources sector and other sectors, such as agriculture and land use planning. (Mostert 1998)

3. Instruments

At least as important as the institutional model are the different instruments and approaches used in rbm. These include instruments for influencing the water users or interfering directly in the basin, and instruments for promoting co-operation between different government bodies, active involvement of the population and the use of expertise. The first category of instruments include regulatory instruments, economic instruments such as charges and subsidies, communicative instruments and ‘operational’ instruments, such as dredging or building dykes). The second category includes informal consultation and negotiations, formal planning, and analytical tools such as policy analysis and monitoring.

The Water 21 project has resulted in an overview of the instruments used in five EU countries and six international basins. In most countries and basins all instruments and approaches can be found, but their popularity differs quite a lot (Table 1). Moreover, the same type of instrument may serve different purposes. For instance, in the Netherlands the function of planning ranges from policy preparation, to strategy formulation and to co-ordinating and prioritising individual activities and projects. In England and Wales, on the other hand, the last function is emphasised.

4. Results of river basin management

In the end rbm systems should be judged by their results and not by their institutional form or ‘theoretical beauty’. Judging results is, however, quite difficult. The availability of information differs from country to country and often the information is not comparable. Moreover, improvements or lack of improvement cannot automatically be attributed to the rbm system: external factors such as socio-economic and technological developments have to be reckoned with too. Nonetheless, we can say that in each country and basin studied a number of problems have been solved or are being solved and a number of problems still await solution. Flooding is an issue everywhere. Usually, there is no complete degradation of the basins, but significant degradation does occur in the form of overexploitation of water resources (e.g. some parts of France), erosion (e.g. the Trancão basin in Portugal), groundwater pollution (e.g. the Netherlands), illegal construction of levies along the river (e.g. the Arc river in France) and eutrophication (e.g. the Netherlands). The integration of water management and land-use planning is usually limited.

Conflicts between upstream and downstream parts of a basin and upstream and downstream countries occur, but ‘water wars’ in Europe are presently unthinkable. More important, it seems, are conflicts within areas. In all countries studied there are major unresolved conflicts between urban development and flood protection (e.g. developments in flood-prone areas) and between agriculture and environmental protection (diffuse pollution, water use). Moreover, sewage is a problem (stormwaters everywhere, treatment in some countries). Industrial pollution has been tackled effectively in most countries.

Ultimately, the major conflict in all countries and basins studied is socio-economic in nature. Although in the long term sustainable rbm is cheaper than unsustainable rbm, in the short term it can be more expensive. Consequently, a balance has to be struck between economic development now and better circumstances (also economically) in the future. The result can only be sustainable.
if environmental awareness is high, if a long-term perspective is used, and if effects in the whole basin are taken into account, including transboundary effects.

5. Discussion

At the moment all European countries have to implement the Water Framework Directive. This Directive requires different changes in the different countries and basins and may also stimulate a more fundamental reorientation on water management. The past experiences described above do not dictate specific solutions, but they do point in certain directions.

Integrated water management

Integrated water management is generally accepted as an important water management principle. Yet, it can be interpreted in different ways. (e.g. Mitchell 1990, Global Water Partnership 2000) If one emphasises internal integration within the water sector, integrated water management may promote the establishment of river basin authorities. If, on the other hand, one emphasises external integration between water resources management and other policy sectors, the principle may promote the commission model (§ 2).

Water professionals working in the water sector often prefer the authority model. Among others, specialised river basin authorities could be better suited for dealing with and with upstream-downstream issues and with technical complex issues. However, the most important water problems in Europe are at the interface between water management and agricultural policy and land-use planning. (§ 4) Consequently, the commission model deserves serious attention. Given the size of most European river basins, the commission model also allows for more decentralisation in water management, in accordance with the subsidiarity principle. This facilitates effective public participation.

The Water Framework Directive contains several provisions that may promote external integration (e.g. art. 9, 12 and 16). From the point of view of internal integration, however, the Directive is not perfect. It covers water quantity only partially. However, it does allow member states to incorporate water quantity fully in the rbm plans and programmes of action.

Regulation or not?

Another issue is regulation. Apart from its financial provisions, the Water Framework Directive is firmly based on a regulatory approach to water management. However, enforcement is very difficult, especially if the number of activities that have to be regulated is large, as in the case of diffuse pollution. Moreover, the political will for strict enforcement is often lacking. Consequently, alternatives such as communicative instruments, self-regulation and ‘gentlemen’s agreements’ are gaining popularity. These instruments would give the different sectors more flexibility and responsibility and could promote the internalisation of environmental concerns. This would greatly increase the support for water management and improve its effectiveness and efficiency.

However, the alternatives have limitations too. Economic sectors will not agree voluntarily to anything that is very costly for them, unless there are specific positive or negative incentives, such as subsidies, a bad press or the threat of government regulation. Moreover, self-regulation requires a high degree of organisation and social control to be effective. Furthermore, government could compromise too much on its environmental goals. Consequently, communicative instruments and self-regulation can be important supplements to government regulation, but they cannot replace it.

2 It is sometimes also argued that river basin authorities are more democratic. They could be more democratic, but also less democratic. This depends among others on whether and how users’ are represented, on the alternatives (central, regional or local government), and on one’s view of democracy (one man one vote or interest group democracy).
International co-operation

Since most European river basins are international, international co-operation is of prime importance for rbm. The Water Framework Directive requires member states to co-ordinate their management, but it says little about the means to do so. The six basins discussed in this paper allow us to draw some conclusions.

First, international co-operation usually takes a long time to develop. The Directive gives Member States only a few years. Nonetheless, Member States should try not to force co-operation and proceed slowly but steady. Or, as the French say: “Hâtez vous lentement!”

Secondly, progress is often achieved in the aftermath of a disaster, such as the Sandoz disaster in 1986, which led to the Rhine Action Plan. (Huisman, de Jong and Wieriks 2000) Immediately after a disaster public attention is high and the political will to do something is present. Disasters are of course to be prevented, but if they do occur, states should be prepared to seize the opportunity.

Thirdly, non-legally binding action plans are sometimes to be preferred to legally-binding treaties. Not only can they be prepared quicker, but states may also be willing to subscribe to more ambitious goals just because they are not legally-binding. Moreover, action plans are still politically binding and their implementation does not have to be worse than in case of binding treaties (cf. the Rhine Action Plan). Nonetheless, states that do not really want to do anything may also prefer action plans to binding treaties.

Fourthly, many international agreements are reached by means of issue linkage. If the water-related interests in upstream and downstream countries conflict, this conflict can be overcome by linking the water-issue with a totally different issue where the costs and benefits are the reverse. This requires a cross-sectoral approach by both states. The negotiations that led to the 1994 Meuse and Scheldt treaties offer examples of both effective and ineffective issue linkages. (Meijerink 1999)

Finally, river basin commissions have proven to be very useful for discussing and co-ordinating technical issues and for negotiating complex agreements. (Dieperink 1998) They could also play a useful role in the implementation of the Water Framework Directive.

Public participation

A key issue for rbm is public participation. (e.g. Renn, Webler and Wiedemann 1995, Creighton 1999, Edelenbos 2000, Gayer ed. 2000, UNECE 2000) Public participation can provide important information for the decision-makers and can make water management more democratic. In addition, it can improve environmental awareness and increase support for rbm. Without this, no ambitious policy can be sustained in the long run. However, there are many hurdles to take. Often, the authorities want to remain in complete control and no real discussion takes place. When no serious follow-up is given, the public may get disappointed, resulting in less support for rbm. Moreover, it is often difficult to mobilise the public. The people that do show up are often not representative of the affected population at large.

Because of these benefits and complications, public participation deserves much attention. In particular the different national attitudes and experiences with public participation deserve attention. Positive examples from abroad may convince countries without a public participation tradition of its benefits, and countries with more experience may learn new approaches and get new ideas. Moreover, the Water Framework Directive necessitates international co-operation in the field of public participation. For international basins it requires the development of international rbm plans or internationally co-ordinated national rbm plans. For all these plans public participation has to be organised in three rounds. (art. 14) If the public participation is not organised or co-ordinated internationally, the reactions from the public cannot easily be taken into account in the intergovernmental discussions and serious follow-up is very unlikely. In other words, to conclude in a truly academic fashion: more research is needed.
Table 1: Instruments and approaches in, and institutional models of river basin management

<table>
<thead>
<tr>
<th>Standard instruments’</th>
<th>More integrated approaches</th>
<th>River basin authorities (A) or commissions (C)</th>
</tr>
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<tbody>
<tr>
<td>Regulato-ry</td>
<td>Economic/financial</td>
<td>Consultation, negotiation</td>
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<tr>
<td>France</td>
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<tr>
<td>Germany</td>
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<td>The Netherlands</td>
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<td>Portugal</td>
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<td>United Kingdom (England and Wales)</td>
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<tr>
<td>Rhine</td>
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<tr>
<td>Scheldt and Meuse</td>
<td></td>
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<tr>
<td>Spanish-Portuguese basins</td>
<td></td>
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</tr>
</tbody>
</table>

1: Only with respect to planning and economic instruments; 2: Usually sectoral and not based on river basins
3: Only at the sub-basin level; 4: Plans still in preparation

References


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OVERVIEW PRESENTATION

Learning From Experience –
the evolution of River Basin Management Planning
in England and Wales over the last 15 years

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Summary

River basin management, to varying degrees, has been practised on a comprehensive geographical basis in England and Wales for over 70 years. However, it is only since the late 1980’s that significant resources have been invested in developing and delivering integrated river basin planning. Experience in river basin planning over the last 15 years falls neatly into three phases:

– 1988 to 1995: integrated river basin planning through ‘catchment management plans’
– 1996 to 1999: integrated environmental planning via ‘local environment agency plans’

Lessons learnt from these three phases, which relate to the planning and consultation requirements of the Water Framework Directive (WFD) are presented. The paper concludes with a set of ‘ten key steps to success’ for those involved in producing River Basin Management Plans (RBMPs).

1. Past, present and future

Agenda 21 was the key output from the United Nations Conference on Environment and Development, held in Rio de Janeiro in June 1992. Chapter 18 of Agenda 21, which deals with freshwater issues and incorporates many principles which are now reflected in the WFD, includes a somewhat optimistic goal in retrospect:

“… plans prepared in support of integrated river basin management should be completed by the year 2000”.

In December 2000 the Water Framework Directive was adopted. This piece of legislation sets huge challenges for all those involved – through from administrators and technical specialists, to stakeholders, and the general public.

Lessons learnt in England and Wales in progressing the equivalent of “sub-basin plans”, in ways which mirror the planning and consultation objectives of the WFD may provide some help in achieving the following target dates:

• 2006 – publish and consult on a timetable and work programmes for the production of River Basin Management Plans for each River Basin District (article 14)
• 2007 – publish and consult on an interim overview of significant water management issues for each River Basin District (article 14)
• 2008 – publish and consult on drafts of the River Basin Management Plans (article 14)
• 2009 – publish River Basin Management Plans for each River Basin District (article 13).

3 (NB: the views expressed in this paper are those of the author and not necessarily those of the Environment Agency for England and Wales.)
2. River basin management in England and Wales

Over the last 70 years, river basin management has evolved through several legislative changes in response to the changing needs of society. These needs have been as diverse as the desire for agricultural self-sufficiency and society’s need for transparency in environmental enforcement.

River basin planning was practised to some degree by some of the organisations that preceded the National Rivers Authority (NRA) (1989 – 1996) and the Environment Agency (1996 – present day). However, it wasn’t until the late 1980s that a geographically comprehensive and functionally integrated approach to river basin planning was initiated across England and Wales.

The NRA pioneered work in integrating all its functions (i.e. flood defence, water resources, fisheries, conservation, navigation, recreation, water quality) through the use of ‘catchment-management plans’ (CMPs) and applied the process coherently and consistently across England and Wales for the first time. This experience contributed significantly to the development of the planning and consultation aspects of the Water Framework Directive.

The 1995 Environment Act, which merged the NRA with Her Majesty’s Inspectorate of Pollution (dealing with Integrated Pollution Control) and the waste regulation authorities to form the Environment Agency created fresh challenges as the organisation had to deliver both integrated river-basin management and integrated pollution prevention and control.

The Environment Agency was charged with taking a holistic view of the environment and took steps to integrate its functions through the use of ‘Local Environment Agency Plans’ (LEAPs). These plans are a logical successor to CMPs. Full coverage of England and Wales was achieved in 2000 through 130 LEAPs.


Research undertaken in 1988 and 1989 led the production of trial plans based on extensive technical analyses, which were subsequently published in mid-1991. At the time these plans failed to achieve unanimous internal management support because of a failure to sell the benefits of the process in relation to the costs involved and the time taken to deliver them. Key lessons learnt during this early ‘trial period’ of practical research were that:

- **Integrated planning was feasible but all-round management support was needed to translate it into practice**
- **The planning process must be as short as possible**;
- **Planning on the basis of what we already know is, in the UK context, an acceptable risk detailed evaluation of proposals follows**.

A NRA National Working Party on Catchment Management Planning was established in May 1990. An important output of this group was a set of draft internal guidelines in 1991 on how integrated water management plans should be taken forward by the Authority. These guidelines established integrated river basin planning as a fundamental part of future NRA activity. The process of producing these plans was similar to the concepts now to be seen in the WFD in that the NRA sought to:

- involve communities and stakeholders through formal and informal processes
- make information available to all
• establish targets for quality, quantity and physical features and establish plans of action to achieve the targets
• report on progress against plans of action
• identify partnerships with others in order to deliver action on the ground.

The key lessons learnt in implementing these guidelines were reviewed in late 1992 and can be summarised as follows:

• *The process, rather than the size of the catchment, determined overall resource needs. Minor catchments should be grouped to minimise costs;*
• *The expected cost of producing a plan was £90,000 (this fell progressively through sharing of good practice to £72,000 in 1994 and £60,000 in 1996);*
• *Plans should not raise expectations beyond what is achievable. However, they should include a long-term vision for the catchment;*
• *Local communities respond very positively to being involved in the process;*
• *Plan preparation forced inter-functional co-operation, understanding of issues and helped build the capacity to manage and deliver on an integrated basis;*
• *The catchments had their own particular needs but a nationally-consistent approach had to be fostered;*
• *Research was required to develop objectives and standards for water quantity and physical characteristics;*
• *Stakeholders should be involved in developing processes to prepare plans as well as the plans themselves."

These lessons were reflected in revised national guidelines which were freely available to community interests, reflecting the openness inherent in the NRA approach to catchment planning. A national programme of activity was established to prepare 164 catchment management plans for the whole of England and Wales by March 1998 (thereby meeting the objective in Agenda 21 to prepare integrated plans by the year 2000).

The move towards planning for and delivering services in an integrated way (both technically and geographically) inevitably meant that the structure of the organisation had to be reconsidered. During 1992 and 1993 the change to multi-functional areas was implemented. *It is unlikely that integrated water planning and service delivery could have been as efficient and effective without this change."

Another key benefit was summarised by a Government Minister in 1994:

“In their system of catchment management plans, which have brought together so many of the river management issues, they (the NRA) are beginning to understand that the matter of public debate and consultation is not just a democratic necessity, it is actually a practical need, for it is from such debate and discussion that some of the solutions hard sought for are discovered.”

However, a key learning that emerged in 1995 was that *if we were to manage expectations and secure best use of our limited resources then our public consultation on CMPs had to be focused more on ‘stakeholders’ rather than the general public.*

4. 1996 to 2000: Consolidation through ‘Local Environment Agency Plans’

Before the NRA could achieve its aim of preparing CMPs for all of England and Wales by 1998, the organisational arrangements in England and Wales were changed. However, the NRA had proved the value of integrated and geographically comprehensive environmental planning. Such
was the strength of support for the NRA’s plans that several non-governmental organisations
lobbied hard to put such plans on a statutory footing when new legislation was prepared. This did
not happen but the Water Framework Directive can now be seen to have delivered that particular
aspiration.

LEAP’s were a natural development from the Catchment Management Plans of the NRA. Based
on river catchments, they set out a simple local vision, and an assessment of state of the local
environment, the pressures acting upon it, and the actions needed to address local issues. In all, 130
LEAP’s have now been published covering all of England and Wales. In total we have estimated
that:

- 30,000 consultations have been made
- commitments have been made to deliver 10,000 local actions
- we have invested about £50,000 on each LEAP on average (in total the whole programme of
  LEAPs is estimated to have cost £8 M).

After more than five years operating experience the general views of stakeholders and ourselves is
that LEAPs have:

- provided a ‘shop window’ for the Agency and environmental issues
- helped establish many local partnerships for the delivery of local environmental
  improvements
- sometimes created false expectations of what can be delivered in the short to medium
  term
- consolidated the concept of integration of our functions on a river catchment basis
- been inhibited by the lack of knowledge of the behaviour of local river catchments since
  they are based on current knowledge only
- had strong support from stakeholders, particularly environmental Non-Governmental
  Organisations (NGOs)
- identified that a sectoral approach, (i.e. one that conveys a message tailor made for the
  stakeholder), is most influential
- helped deliver awareness of catchment issues
- not succeeded in connecting the Agency to local communities due to the limited impact
  of generalised public consultation.

5. 2000 and beyond: Capitalising on success – dealing with gaps

The Environment Agency has demonstrated that a comprehensive set of integrated sub-basin plans
can be produced within 6 years of the completion of trial plans. However, LEAPs fall short of the
expectations of the WFD in many respects even though they do deliver about 74% of the
requirements of the River Basin Management Plans as envisaged by the WFD. Some shortfalls of
particular note are:

- A lack of scientific understanding of catchment processes
- A lack of public engagement (as compared to stakeholder engagement)
- A lack of funding sources and/or techniques to evaluate and deliver all necessary activity
  (particularly habitat restoration and diffuse catchment impacts).

Natural events (droughts in 1995 and 1996, and floods in 1998 and 2000) have created the impetus
in Government (with considerable support from the public) as well as river basin managers and
practitioners to tackle some of the above shortfalls through the preparation of sectoral plans such.
Within England and Wales we therefore now have a range of sub-basin and sectoral planning initiatives to support the WFD

- Catchment Abstraction Management Strategies (CAMS)
- Catchment Flood Management Plans (CFMPs) and Shoreline Management Plans (SMPs)
- Fisheries and Salmon Action Plans (FAPs and SAPs)
- Biodiversity Action Plans (BAPs)
- Asset Management Plans (AMPs) to drive water industry investment
- LEAPs.

The move towards greater investment in sectoral planning does not reflect any lack of will to pursue the goal of integrated river basin planning but is a recognition that difficult sectoral issues are best tackled on a sector by sector basis with relevant stakeholders within the context of the principles enshrined within the WFD. This development must also be seen in the light of the Environment Agency’s recognition that widespread public engagement is probably best achieved through regional and local government initiatives rather than Environment Agency initiatives. This change is tenable because of the:

- wider recognition of all environmental agencies of the need to work and deliver in partnership
- the harnessing of the power of GIS (geographical information systems) tools to manipulate information and data to both political and river basin boundaries
- the much improved capacity of functional practitioners to think and operate in an integrated way
- all planning is undertaken in respect of sub-basins and through stakeholder/public consultation and with the objectives of the WFD in mind.

Over the next few years therefore we expect to see the following new developments in support of river basin planning in England and Wales:

6. Local Environment Action (not Agency) Plans

We envisage LEAPs becoming a guide (or ‘map’) setting out a holistic view and Vision for the local environment, linked to a range of activity, outputs and outcomes. This shared ‘map’ will enable these activities etc. to be understood, signed up to, delivered, and co-ordinated. It will be important to be able to ‘cut’ the map on any boundary for any stakeholder. We should concentrate on direct action that delivers outcomes. They should exist as a GIS database, and be published as brief straightforward documents, to serve as a shop window of what our partners and we will do and achieve over the next financial year, and what we are aiming for in the longer term.

We aim to pilot the approach in the second half of 2001, preparing for general adoption of this approach in 2002/3.

**Catchment Abstraction Management Strategies (CAMS)**

The present licensing system for control of water abstraction in England and Wales was introduced in 1963 and is administered by the Environment. In March 1999, the Government published proposals to change the abstraction licensing system. A key proposal was for the development of Catchment Abstraction Management Strategies (CAMS). The Agency has now developed the objectives for CAMS which are:

- To make information publicly available on water resources availability and licensing within a catchment;
To provide a consistent and structured approach to local water resources management, recognising both abstractors’ reasonable needs for water and environmental needs;

To provide the opportunity for greater public involvement in the process of managing abstraction at a catchment level;

To provide a framework for managing time-limited licences;

To facilitate licence trading.

Public consultation is an integral part of the CAMS process. There is a pre-consultation period involving key stakeholders and a consultation document forms the basis for a period of formal consultation. After this period of consultation, the strategy is finalised, taking into account the views of respondents, and the Catchment Abstraction Management Strategy is produced and published.

CAMS will complement the existing Local Environment Agency Plans and in many cases the boundaries are the same. CAMS areas are largely on surface water catchments, but may reflect the boundaries of groundwater units that feed the surface water catchment. The planned production schedule of CAMS envisages 129 plans in place by 2006 at a cost of about £ 2.7 M per year.

**Catchment Flood Management Plans (CFMPs)**

The UK Government published guidance in 1993 stressing the importance of a strategic approach to planning river and water management. In view of the complexity and cost of producing such plans priority was given to producing strategic plans for the coast where it was felt there was a greater risk to property and life. A first set of Shoreline Management Plans (SMPs) has now been produced and a similar approach to the inland fluvial catchments is now being developed, learning from the lessons of the production of the SMPs.

Following discussion between the Environment Agency and Government Ministers following very severe flooding in Autumn 2000, it was agreed studies should be initiated to prepare Catchment Flood Management Plans (CFMPs). These will provide a large-scale strategic planning framework for integrated management of flood risks to people and the developed and natural environment in a sustainable manner.

Interim guidelines have now been completed and will be issued soon by the Environment Agency for consultation with stakeholders. Pilot studies have been initiated in five catchments and a programme for the full production of the CFMPs for England and Wales is currently being developed. Still to be considered, in parallel with other new and ongoing research studies, are the development of methodologies and guidance for developing consistent scenarios of climate change, land use change, and socio-economic development for use in CFMPs.

It is anticipated that there will be a total of some 80 CFMPs, and the current guidance suggests 4-6 months for scoping studies and up to 14 months work to complete CFMPs. An indicative investment of £ 6.6 M over the next 5 years is expected to produce the 80 or so plans envisaged. The time taken is likely to be constrained by the availability of appropriate expertise rather than by the availability of funding.

### 7. Conclusions

The Environment Agency now has 15 years practical experience of integrated river basin planning at the sub-basin and sectoral level. Our understanding has evolved over those years and continues to develop in the light of new developments and pressures.

The past investment in plan preparation and public consultation has put the Agency in a strong position to deliver River Basin Management Plans in England and Wales through active public
consultation as envisaged in the WFD. However, the level of on-going investment in sectoral plans such as CFMPs and CAMs recognises that much work still needs to be done.

The earliest ‘catchment management plans’ were prepared in 1991. These early plans have now been subject to formal review on two occasions. More importantly many of the actions identified in these early plans have now been implemented and are contributing to an improvement in the water environment. In many cases projects have been implemented through innovative partnerships created through the planning process.

The rolling programme of CMP/LEAP implementation has had the double benefit of ensuring early action on the ground and allowing lessons learnt to be actively fed into on-going plans. Experience from England and Wales indicates that prior to the December 2009 deadline for the publication of draft River Basin Management Plans there is a clear opportunity to prepare and implement trial sub-basin, sector and river basin management plans in order to ensure the success of the WFD.

Our experience in integrated river basin planning and public consultation has taught us ‘ten key lessons’ in relation to effective delivery, which can be summarised as follows:

1. Involve communities and stakeholders in the development of plan making processes as well as the plans themselves
2. Develop and build your capacity (i.e. skills, people, tools) to deliver plans early and progressively
3. Effective sharing of good practice on plans can reduce costs and timescales
4. A well organised river basin authority is likely to aid production of plans and delivery of actions
5. Integrated river basin planning on the basis of existing knowledge enables effective action on the ground to be planned and initiated at the earliest possible opportunity. However, this does not avoid the need for appropriate investigations to improve understanding of catchment processes.
6. A mixture of sub-basin plans and sectoral plans are likely to be necessary – all plans should be subject to public consultation
7. Stakeholders and the general public will require to be involved using a range of different public consultation and education tools
8. Plans create expectations which need to be managed
9. Geographical Information Systems are a powerful tool for plan making and public consultation
10. Always remember that it is what we deliver on the ground that is important – not what we put in a plan.

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Session 2:

Integrating the Different Components of River Basin Planning
COMPONENT EXAMPLE

Public Participation in Generating and Appraising Floodplain Options:
Learning From Experience –
The ‘EU Wise Use of Floodplains Project’

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Summary

This paper deals with the extensive public participation that has taken place within the context of the three-year EC LIFE Environment-funded project entitled the ‘EC Wise Use of Floodplains project’. The project demonstrates very well different methods of involving the public, or ‘the community’, in generating and appraising land management options – in this case floodplains. It shows how to bring together different views about long-term management, if not of entire floodplains, then at least of smaller geographical areas within an overall floodplain or water catchment. The paper is divided into three parts:

• an introduction to the wise use project itself, its objectives (both general and dealing specifically with participation issues) and the various organisations involved;
• secondly, a very quick flavour of the diverse and interesting approaches to public participation that have occurred in five of the six project areas (the sixth project area – the Cherwell, England – has focused on hydrological modelling rather than public participation);
• finally, a look at lessons and conclusions drawn from the participation work completed so far.

1. Introduction to the Wise Use of Floodplains project

The overall aim of the Wise Use of Floodplains project is to demonstrate how floodplain wetlands can contribute to the sustainable management of water resources within river basins. The more specific objective for public participation is to use a range of public participation methods within the generation and appraisal of floodplain wetland restoration scenarios.

The context of the wise use project, is the requirement of the EU Water Framework Directive (WFD) which stipulates that Member States shall:

“encourage the active involvement of all interested parties in the implementation of this directive, in particular in the production and review of the river basin management plans”. (Article 14).

There is a specific requirement relating to consultation measures to be taken at least three years before the beginning of the period to which any plan refers.

There is additionally specific reference in the Directive to making available to the public for comments various planning documents including timetables and work programmes. The whole flavour of Article 14 of the Directive is of transparency and involvement.

Now complementing the Water Framework Directive there is also the prospect of a public participation directive, currently in draft form with the European Commission and targeted most specifically at issues relating to air quality, waste planning and landfill.

4 The Royal Society for the Protection of Birds
Speaking for the UK, the public involvement or ‘consultation’ requirements of the WFD are entirely in line with a political and democratic context where local communities are increasingly demanding more and more involvement in, and a say over, decisions which affect them.

The England Rural White paper, for example, is strong on community involvement in decision making and UK Local Authorities now have to produce community plans. Recently, there has perhaps been no topic directly affecting some people’s lives more than flooding – a very emotive issue on which many have views. Equally there are firmly held views on related topics such as water quality, the future of agricultural land use and recreation and rural tourism.

The Wise Use of Floodplains project is being co-ordinated through BirdLife International, and specifically through the UK BirdLife Partner, the Royal Society for the Protection of Birds, the largest non-governmental conservation organisation in Europe and with a membership across the UK of over one million.

Perhaps as a mark of the importance of this project and some of the groundbreaking work it is doing in preparing for implementation of the Water Framework Directive (particularly on participation), the project is also supported by many key water management agencies across England, Ireland, and France, many of these organisations also having a Europe-wide remit.

There are six project areas: three in England (the Somerset levels in the south-west, the Cherwell in central England, and the Fens in East Anglia); one in the southern part of Scotland, near Edinburgh (the Forth catchment); one on the west coast of France (the Charente catchment) and one on the border between Northern Ireland and the Irish Republic (the Erne catchment).

2. Different approaches to participation

**Charente**

In essence, in the Charente Maritime, on the west coast of France, near Rochefort, consultants from the University of Paris have conducted a formal audit of natural assets across the catchment – *un audit patrimonial* or ‘heritage audit’. A wide range of community representatives from across the whole catchment has been involved. In three smaller ‘focus areas’, there have been interviews and meetings on a community and group level (particularly with farmers and local politicians). Participation has taken place at two levels. The macro level, looking at the entire Charente floodplain, and the micro level.

At the macro, catchment-wide level the heritage audit has involved 120 people using individual interviews and also meetings. It has culminated in a large report which includes a summary of the current issues and future scenarios as proposed by all the people interviewed. The audit forms an excellent basis for future consensus working.

At the micro level, issues such as grassland maintenance, grazing and agriculture along the floodplain have been discussed with individual farm groups. Also, in the ‘Charente des Iles’ focus area participation is being used to try and develop a shared action plan for that smaller territory, integrating environment tourism and agriculture.

The entire Wise Use project in Charente is dependent upon political support. It is unlikely that an integrated plan can be achieved for the macro catchment level – at least within the time frame of the Wise Use project – but this may be possible for some of the micro focus areas.

**Somerset Levels, England**

In the Somerset levels the emphasis is on a very flexible approach bringing a wide range of people and organisations together regularly and informally to meet in various venues (e.g. village halls and
Meetings have been ‘facilitated’ by a team of two people. There has also been a lot a partnership working. Participation was also organised in the context of four other projects.

Key themes are partnership working, and context (flooding, agricultural decline). Methods are very simple and inexpensive, with the team of two building up an approach, style and trust. The work focused on the lower part of the catchment (the River Parrett catchment) as an existing initiative was already up and running there. There was considerable reliance on a host organisation with existing contacts and trust, namely the Levels and Moors Partnership (LAMP).

**Forth, Scotland**

The Forth is another large catchment – 4000 square kilometres, including urban areas such as the major town of Stirling, but outlying areas are highly agricultural. In the Forth the approach, has also been fairly structured through the assistance of consultants with use of community participation techniques, such as mapping and going out to the community to seek their views in public places. There has been concentration on a smaller focus area along the catchment covering an area around the west of Stirling known as the Carse.

Participation was stimulated out on the streets, e.g. in shopping centres or door-to-door, with over 400 people, of all types, involved. Maps were made of likes, dislikes and ideas for change – a photo report was made by the consultants including all the maps and stickers.

The results and issues were analysed and presented back to the community. But there were complaints that farmers were under-represented. Farmers sometimes feared or distrusted the process, concerned that someone was going to flood their fields the following week. Now farmers have been fully included but it has taken a while to allay their fears. There is a key lesson here: to make sure major stakeholders feel they are sufficiently involved. The consultants went for a cross-section of the community, but perhaps made inadequate visits to agricultural areas (contrast Charente where farmers were very involved). The situation has now been settled and special meetings were held with farmers to explain any misunderstandings that had arisen and involve them more fully.

**Fens, England**

An existing participation method (previously mostly used in urban contexts) called ‘planning for real’ has been adapted and large models of the floodplain have been used to involve two Fenland communities in two villages in exercises to express their views on floodplain management options near to where they live. The new method has been called ‘planning for floodplains’.

The Fens comprise a large coastal plain of 4,000 square kilometres, drained by four principal rivers. As for the Somerset Levels, an existing project – ‘Wet Fens for the Future’ – provided a context for the Wise Use of Floodplains work to build on, broadening out beyond environmental interest to include a wider range of people and achieve a plan for multi-use wetlands (recreation/conservation/jobs etc).

‘Planning for floodplains’ involved discussion of management ideas and options and putting ideas on large-scale maps made into a big polystyrene-based model. The village events were held in central venues (e.g. libraries) and were very popular events, advertised locally; people complained if they were unable to make a meeting. 2% of the community in each village joined in. Options for wetland creation are now being developed and we will go back to the community with them.

**Erne, Irish Republic/Northern Ireland**

This is a large cross-border catchment, with a total area of 4,340 square kilometres on the border between Northern Ireland and the Irish Republic. Participation has involved many stakeholders on both sides of the border in a wide range of participatory methods. Members of the community have been trained themselves in these methods which include: questionnaires (to 100 people)and...
community surveys (another 300 people). ‘Community survey’ involves getting people to identify issues and features of importance to them.

The Erne has used a massive range of participatory techniques – making maps, a ‘water map’, timelines and ‘strengths, weaknesses opportunities and threats’ analysis (SWOT). The details of all these methods are available (see web site address at end of paper). Mapping exercises were also held on the streets of local towns, in shops and pubs.

A range of issues and management proposals have emerged from this participation process and will themselves be appraised in a participatory way, e.g. integrated catchment management, nutrient management and greater use of agri-environmental schemes. However, participation has shown very strongly that the administrative management of wetlands is really only realistic at catchment level or smaller. Management would not be realistic say at a massive cross-border river basin district level. For this reason, participation work with the public should also be carried out at catchment or sub-basin scales.

3. Evaluation and conclusions.

One of the key questions those involved in river basin planning will ask is whether all the effort to stimulate public participation has been worth while, and what has been produced in terms of concrete results.

One of the tasks we are embarking on is evaluation of all the participation work that the Wise Use of Floodplains project has involved, and what it has produced. Have different components, essentially, social, environmental and economic, been integrated through participation? Has it resulted in a strategic plan and/or vision for the catchment in question (or, more often and more realistically, part of the catchment)?

At the end of this paper is a diagrammatic representation of a ten-point evaluation framework. Called for now ‘Cuff’s circle’ it is based on academic work being done in this field of research by ‘Interact’ in the UK and has been adapted for use in the Wise Use project.

**Ten-point flow to the evaluation process:**

1. Objectives **Why do participation work?** What are the objectives? – this is a vital reference point for evaluation.
2. **Contexts** for the participation – helps evaluation. Was participation, for example, part of a larger strategy? Political context, economic context.
3. Levels of involvement – all to do with how **early you involve** people, how **much power** is handed over and when.
4. **Who was involved,** how where they chosen, and what mistakes were made?
5. **What methods** used e.g. maps, interviews? Did they work?
6. **Innovation** – of method or just participation itself for that area?
7. **Commitment** to use or not.
8. **Inputs** – time, money etc. and results in relation to those inputs.
9. **Outputs** – hard outputs, e.g. reports, posters, press, completed survey forms.
10. **Outcome** – most important culmination of the evaluation – outcomes from the Wise Use of Floodplains project now being looked at; in many areas, outcomes will be in the **longer term** as partnerships are formed and integrated planning for floodplains begins.

So what has the evaluation told us? What lessons are emerging?
• **River basin management can be difficult to understand.**
i.e. few individuals can relate to the scale of an entire River Basin District or even an individual catchment and the complexities of the inter-relationships involved. A farmer cannot necessarily appreciate for example that what he is doing on a mountainside affects lakes miles away. Consequently, river basin Districts and even individual catchments may at least initially have to be broken down to geographical areas that people can relate to.

• **Context is crucial**
It affects people’s reactions, enthusiasm and commitment to act.

• **No one technique is entirely transferable – mix and match.**
The five areas have all approached things differently with different results.

  Decision makers need a range of techniques/flexibility – to reflect diversity of issues across a catchment and diversity of ‘public stakeholders’. Methods do not necessarily need to be complex or innovative (though may be innovative in local context).

• **Train for and test techniques**
Easier to try them than to explain. Using professionals can help things run smoothly. Clarity of objectives is vital, as is good organisation.

• **Plan reporting of process carefully**
e.g. if 100-plus survey forms are gathered, someone has to analyse them. Many of the community mapping exercises are quite hard to report – they result in lots of photos of maps and stickers which the consultant puts in a photo report. This generates lots of additional work as the photos have to be analysed, interpreted and turned into a range of options. This was the case on the Forth. The interview structure used in the Charente was easier to write up as all the interviews followed the same format.

• **Resource hungry – time is the key not so much money.**
Personal approach and dedication are needed, with weekend working, evening meetings etc. Process often has to be cumulative and gradual over time. Money can be saved in many ways, such as by training local people in participation techniques.

And finally, some key messages are:

• **Use host organisations, existing initiatives, form partnerships; this can save time and build trust more easily**

• **Public support is vital if management options are to succeed in delivering social, economic and environmental benefits in the long term.**

• **Participation rewards can be great.**

• **Not involving communities is not an option; early involvement is an investment and can avoid problems later.**

Each area needs to work out what is realistic/prioritise. Whose opinion is really needed, what is the best method? Distinguish between those affected by decisions but not responsible and those responsible

Some tangible results are already emerging in some areas from the Wise Use of Floodplains project, but it is still early days. Work continues on developing generic principles for participation.
In conclusion, this paper demonstrates a little of the participation experience that the WUF project is producing for the generation and appraisal of floodplain restoration scenarios. However, WUF is also gathering experience on multi-criteria appraisal processes and, in addition, a vast amount of work is being done on policy analysis – the project is not only about participation. There are two websites with further information.

www.floodplains.org
and
www.valdecharente.org

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COMPONENT EXAMPLE

Multi-Criteria Evaluation Applied to River Basin Management

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Summary

The aim of the project was to select a develop a methodological approach to the evaluation and decision-making in the field of water projects, which would enrich the present routine procedures and promote the integration of different dimensions of the environmental problems, different perspectives of scientific disciplines (trans-disciplinarity) and stakeholders (participation). A multi-criteria decision-aid method – the NAIADE model – was experimentally applied to three case studies in order to illustrate the potential of this approach for integrated river basin management. Of these three case studies, the research procedures and results of the application of the NAIADE model to the water management in the rice paddies of the Guadalquivir river marshlands are briefly described in this paper.

1. Aims of the project and methodology

This paper is the result of a research project sponsored by the Directorate General of Hydraulic Works - DGOH - (Department of Public Works and Transport) of the Andalusian regional government\(^5\). The project was aimed at identifying and/or developing an innovative approach to assist the decision-making process in the field of water management. The aim of the project was to select and develop a methodological approach to the evaluation and decision-making in the field of water projects, which would enrich the present routine procedures and promote the integration of different perspectives of different scientific disciplines and stakeholders. In particular, the approach should allow the integration of different types of criteria of evaluation or dimensions of the decision-making problems: socio-economic, environmental, cultural and spatial dimensions. Secondly, it should facilitate the integration of different scientific disciplines with their respective measurement units, languages and approaches (trans-disciplinarity). Finally, but closely related to the former, it should assist in the integration of values and legitimate arguments of the different groups of actors involved, i.e. rethink the way in which decisions are taken, by promoting greater participation of the actors involved (public participation).

To operationalise such theoretical and methodological approach, three case studies were selected within the context of water management and planning in the Guadalquivir basin: the irrigation supply to the rice paddies of the Guadalquivir river marshlands – which will be illustrated in this paper-, the water supply system of the city of Seville, and the environmental restoration programme of the Guadaira sub-basin. In these three case studies, the aims of the project were to structure public debate and to provide technical staff and decision-makers of the area with a sound basis on which to build their decisions. The focus of the exercise has been the sub-basin level, although other decision-making levels (national and European) were also taken into account in the analysis. In particular, the research developed in the midst of an intense debate over water planning – in particular the approval of a controversial National Water Plan ( Moral & Sauri, 1999)-, of an important reform of the institutional and economic framework of water management (Giansante et

\(^5\) The project was carried out in the framework of a Cooperation Agreement between the Department of Public Works and Transport and the Andalusian Universities, signed in 1995 and resulting in the approval of this specific research project in 1997, which was finalised in December 1999.
al, in press) and of a renewed interest in the search for new strategies to tackle drought and water scarcity (Giansante, ed. 2001). All these factors were examined closely and added realism to the assessment and decision exercise, by taking into account its political, cultural and social context.

The exercise was not, however, part of a formalised/compulsory water planning process – that proceeded in a parallel way both at the national and regional level – and the results of the study were not binding. In that respect, the public participation component of the methodology was exploratory, rather than deliberative, in that it represented an input for modelling and a simulation of a new participatory and integrated approach to decision-making, which could improve and enrich the present top-down planning routines. In fact, although the project did not translate into real participation in decision-making, the interest and collaboration of the organism that commissioned and sponsored the research (DGOH) - one of the key actors in water planning in the region - denotes a positive attitude towards participatory and integrated river basin management. To this respect, although the Water Framework Directive (WFD), which provides a legal basis for integrated river basin management and public consultation, was not explicitly considered in the project, the latter may provide insights and some experimental results in the application of integrated assessment methods to the local/regional scale, as well as setting a research agenda for the future in this field.

Multi-criteria analysis (MCA) was selected as a methodology that meets the mentioned requirements of integration and, due to its integrative nature, is compatible with other approaches and methods (dynamic simulation models, sustainability indicators, cost-benefit analysis, etc.). In particular, the NAIADE (Novel Approach to Imprecise Assessment and Decision Environments) model was chosen for its application to the case studies. NAIADE is a partially compensatory multi-criteria method, i.e. it allows for a certain degree of compensation between evaluation criteria, by taking into account the intensity of preference. In fact, the solution to multi-criteria problems may either involve a common measure, through which different values/criteria can compensate one another (strong comparability and commensurability of values, as in utilitarian approaches) or assume the incommensurability of values and a weak comparability of the management alternatives, as in NAIADE. Within this approach, modelling is not used to promote a ‘neutral’ evaluation process removed from its political arena, but rather -precisely because of the highly politicised nature of water planning in the region - to add realism to the decision-aid method, by striving to render the assumptions made at each stage of the assessment as explicit and transparent as possible. To this respect, the model used pays particular attention to the uncertainty concerning the available data and inherent conflict of values on which decisions are to be based. In fact, water is framed here as a multi-functional, socio-economic asset and the problems and decisions related to its management and planning are understood as social conflicts of interests and values, which reflect multi-dimensional intra- and inter-generation distribution conflicts.

With these premises, the role of modelling involves the acknowledgement of the complex, multi-dimensional and incommensurable of environmental problems and of the limitations of science to know and measure with precision its implications, in line with the epistemological foundations of post-normal science (Funtowicz et al, 1998), which identifies uncertainty and conflicts of values as key aspects of the role of science in the political arena of environmental management. To tackle these two aspects, post-normal science advocates for the extension of the experts and decision-makers community to a broader range of actors, with the consequent extension of the relevant facts in the formulation of the problem and evaluation of alternatives. This leads to a new concept of quality and rationality of the decisions taken in the environmental arena: from a substantive rationality of the decisions to a procedural rationality of the decision-making process.

In line with these premises, the main advantages of the NAIADE model are:

- The possibility to use information of a ‘mixed’ type: in the evaluation matrix, both quantitative – deterministic, stochastic and fuzzy – and qualitative information may be introduced (see Table 1). Both qualitative information (translated into linguistic variables) and quantitative
information characterised by a high degree of uncertainty, are represented through the conceptual structures developed by fuzzy mathematical theory. The ranking of alternatives according to evaluation criteria is also achieved through fuzzy preference relations.

- In the NAIADE model an innovative process is used for the integration of the preferences of complex decision-making centres. This model does not use any traditional criteria weighting method, but a method of analysis of coalition between the actors involved, based on coalition formation theory and game theory (see Table 2 and Figure 3), which also uses the conceptual tools of fuzzy sets (fuzzy cluster analysis). This requires the interaction with the actors involved, in order to explore their preferences, positions and values.

- The application of this multi-criteria analysis approach should be combined with a detailed study of the ecological, social, historical and institutional context and with the participation of actors from the first phases of the analysis. This allows for a better understanding of complexity and the multiple dimensions of environmental problems and for the integration of different scientific disciplines.

2. The case study: the rice paddies of the Guadalquivir river marshlands

One of the case studies for the experimental application of the NAIADE multi-criteria analysis approach was water management in the rice paddies of the Lower Guadalquivir basin. The definition of the specific decision-making problem to be analysed was based on the previous knowledge and diagnosis of the water management problems of the basin, as a whole, as well a brief round of consultation with the local actors involved (technical staff of local and regional administration of water and the environment, farmers organisations). The environmental objective to reduce the overall water use in the Guadalquivir basin has been a determining factor in this phase. In fact, water use in the rice paddies is extremely high (10-15,000 m³/ha) compared to any other irrigation crop in the basin. Rice plants cannot bear water salinity higher than 1-1.5 gr/l, without significant decreases in production. Salinity is therefore the main limiting factor for this crop, as the main source of supply for the rice paddies is water from the river estuary, which is subject to tidal influence (most of the surface is irrigated with water abstracted from river uptakes located between 50 and 75 km upstream of the estuary, except 1,200 ha irrigated with groundwater and 6,000 ha on the left bank, which are supplied with water from the Lower Guadalquivir Basin Irrigation Canal, dark area in Map 1).

Salinity in the estuary varies along a gradient (tapón salino), whose length, concentration and movements depend on the tide level and the flow rate of the river. As a consequence, large volumes of water must be released from the reservoir network of the whole basin in order to keep the salinity in the estuary under control for the requirements of the rice paddies. Thus water management in the rice paddies of the Guadalquivir river marshlands is tightly linked to water management in the rest of the basin and is particularly vulnerable to drought situations, during which priority is given to emergencies, such as the irrigation of tree plantations. In addition, the proximity to the national park of Doñana creates a situation of both competition and complementarity, as the rice paddies provide refuge for numerous bird species, especially during droughts. Finally, the high productivity in the area (7,500-10,000 kg./ha), good commercial prospects in recent decades and the consequent expansion of the cultivated surface (presently more than 38,000 ha – some of it without the corresponding abstraction permits) and importance of this sector in the local economy, in terms of employment and associated industry, all contribute to explain the significance of this water management issue in the region.

Given the priority assigned to the environmental objective to reduce water use in the Guadalquivir basin, out of the range of water management options, the reallocation the available water resources to different crop types, according to economic, social and environmental criteria, was selected as the decision-making process, leaving aside the options aimed at resource augmentation. In fact, one
of the drafts of the Guadalquivir Water Plan (1994) included the proposal to convert the rice paddies of the left bank into a less water-demanding crop. The four management alternatives, that were considered, have been selected among the most common cropping patterns in the area. These were three irrigated crop alternatives – Rice (R); Sugar beet-Cotton rotation (S-C), Sugar beet-Wheat-Cotton rotation (S-W-C) - and a dry-farming alternative, i.e. Wheat-Sugar beet rotation (W-S) (Table 1). The evaluation criteria chosen have been socio-economic (economic benefit, employment, indicator of dependency on subsidies) and environmental (per hectare water use, environmental pressure indicator and biodiversity indicator) (Table 1). The mentioned indicators have been specifically designed for this research, based on the general objectives and the available information and have been expressed as linguistic variables for their introduction in the evaluation matrix (Table 1). The ranking of alternatives was performed in a dynamic way, by including scenarios of increase of water prices, which allows, on the one hand, to detect the dependency of the ranking results on the present system of subsidies to the costs of water and, on the other hand, to simulate the consequences of possible institutional changes of the current pricing and economic regime of water management. In addition, the analysis - through the impact matrix of the NAIADE model (Table 2) - of the position of the most relevant actors concerning each management alternative helped to identify likely coalitions and key actors (Figure 3), to structure knowledge and foresee and test actors’ likely responses to new institutional scenarios. Ideally, this part of the analysis is most suitable for direct interaction between stakeholders and decision-makers.

The specific results of multi-criteria analysis of the rice paddies water dilemma may help illustrate the type of conclusions that may be achieved with this participatory modelling approach. It should be noted that such conclusions should not be considered as an end results, but rather as an intermediate step in a longer public consultation and institutional learning process. Concerning the ranking of water management alternatives analysed in the rice paddies of the Lower Guadalquivir basin with the NAIADE model, the optimal alternative in terms of minimising water use – i.e. dry-farming wheat-sugar beet rotation (W-S) – always ranks last under the current institutional scenario (Figure 2). This situation would only change starting from considerable water price increases (from the present 2.5 ptas./m³ to 15 ptas./m³). The dry-farming alternative also arises the greatest social opposition, as it can be inferred from the impact matrix (Table 2) and the veto diagram of the coalition formation process (Figure 3). On the other hand, the Cotton- Sugar beet rotation (C-S) ranks first in the NAIADE model and does not generate too much social opposition (being the second best choice for a vast coalition of actors, Figure 3). Clearly the decisions finally taken are not bound to be based exclusively on the results of the model, but this may certainly orient the course of actions. In this specific case study, for example, it may be worth initiating a thorough consultation process to discuss the possibility of conversion of part of the rice paddies into a cotton-sugar beet rotation and to explore the possible consequences and crucial institutional factors in this transition.

3. The future

Given the dynamic and iterative nature of this multi-criteria approach, this research has set the premises for a longer term participatory research process. In particular, the general scheme of the MCA analysis can be improved and fine-tuned, so as to include/exclude and/or create new alternatives and evaluation criteria, improve the quality and reliability of data and the auxiliary methods for the design/measurement of the evaluation indicators and, finally, validate the impacts matrix through a more direct interaction with the involved actors. The whole decision-making process – assisted by the NAIADE modelling approach and the continuous interaction with the actors involved – is meant to be flexible and receptive and to take up lessons and learn from the mistakes made in the previous phases of analysis and implementation.

In addition, further developments may be envisaged with the creation and test of institutional scenarios, related to recent or upcoming changes in water legislation, subsidising systems, new regulations on integrated management of crops, new management rules and priorities in situations
of drought, etc. Specific attention should also be paid to macro-trends and sectoral policies at the EU level – which was not explored in this project given the regional and local level of the decision-making process it aimed to assist - that may enhance/pose obstacles for the implementation of national/regional water policy objectives.

References


Map 1: Geographical location of the case study area
(rice paddies of the Lower Guadalquivir Basin)

Table 1: Matrix of alternatives

<table>
<thead>
<tr>
<th></th>
<th>Rice</th>
<th>C-S</th>
<th>C-W-S</th>
<th>W-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Benefit</td>
<td>286.681</td>
<td>Approx. 342.263</td>
<td>269.955</td>
<td>115.388</td>
</tr>
<tr>
<td>Employment</td>
<td>8</td>
<td>10.5</td>
<td>7.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Indicator of dependency on subsidies</td>
<td>Bad</td>
<td>Moderately bad</td>
<td>Mod. bad</td>
<td>Moderate</td>
</tr>
<tr>
<td>Per unit water allowance</td>
<td>Aprox.12.000</td>
<td>Aprox.5.750</td>
<td>Aprox.4.600</td>
<td>0</td>
</tr>
<tr>
<td>Environmental Pressure Indicator</td>
<td>Very bad</td>
<td>Very bad</td>
<td>Bad</td>
<td>Moderate</td>
</tr>
<tr>
<td>Biodiversity Indicator</td>
<td>Very good</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Figure 2: Ranking of alternatives
Table 2: Impact Matrix for the coalition formation analysis

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Equity</th>
<th>A-R</th>
<th>A-T-R</th>
<th>T-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pequeños agricultores</td>
<td>Good</td>
<td>Moderate</td>
<td>More or Less Bad</td>
<td>Very Bad</td>
</tr>
<tr>
<td>Grandes agricultores</td>
<td>Good</td>
<td>More or Less Bad</td>
<td>Moderate</td>
<td>Bad</td>
</tr>
<tr>
<td>Ambientalistas</td>
<td>More or Less Good</td>
<td>More or Less Bad</td>
<td>More or Less Bad</td>
<td>Moderate</td>
</tr>
<tr>
<td>Economías secundarias</td>
<td>Good</td>
<td>Moderate</td>
<td>More or Less Bad</td>
<td>Bad</td>
</tr>
<tr>
<td>Regantes cuenca alta</td>
<td>Bad</td>
<td>More or Less Good</td>
<td>Good</td>
<td>More or Less Bad</td>
</tr>
</tbody>
</table>

Figure 3: Dendrogram of the coalition formation process (NAIADE model)
Session 2: ‘Integrating’ the different components of river basin planning
COMPONENT EXAMPLE:

Integrating Water Uses into wider Spatial Planning:
the Emå River Project

Bodil Liedberg Jönsson
Manager Emå project, Sweden

Summary

The Emå River Project is actively trying to protect and improve the water quality in the Emå watershed. Several projects have been launched, in order to develop biological, physical and chemical qualities. The authorities and voluntary organisations work together in specialised workgroups. This lecture will focus on four different topics. First I focus on the restoration of fish migration. Secondly I focus on water management in order to provide a minimum flow. Then I will present our work to reduce the environmental impact from storm water. And, finally I want to give you an introduction to our approach on nutrients, especially from arable land.

1. Background

The Emå river basin is situated in the south-east part of Sweden. The river runs into the Baltic or, more exactly, into the Kalmar Straight, between the cities Oskarshamn and Mönsterås. The watershed is sparsely populated, only 100 000 inhabitants on 4 450 km². In the area there are more than 850 lakes and more than 800 kilometres of rivers and streams. The land is predominantly covered by forest and the arable land covers about 12% of the area.

Starting in 1997, eight municipalities, two Regional Administrative Boards, together with the Farmers Union, The NGOs, fish water owners, sport fishing organisations and local history associations are cooperating in a watershed project. The main issue of the Emå river project is to create an economically and environmentally sustainable society in the Emå region. This cooperation project started because there are several areas of conflict concerning the use of water in the Emå river basin.

2. Spatial planning - in the legal sense or in a broader sense

The Emå River Project approach to spatial planning has been somewhat informal. We try to reach our goals by applying a ‘bottom up perspective’. It is important that all stakeholders are given the opportunity to take part in the planning of projects and other activities.

Most decisions about how to proceed, within the frames of the project, are made by the project board of directors, with members from all the organisations mentioned above. The municipalities are in the majority with 4 seats out of ten. The Regional Administrative Boards have one seat each, the Emå water board has one seat, as have all the other stakeholder organisations. In all, there are 12 seats on the board.

While planning a new project, all stakeholders are invited to give their view on the project. We do not proceed if it is impossible to reach common agreement with a large majority of the stakeholders. This approach saves time. If all projects would have to be preceded by formal spatial planning, in all the municipalities concerned, the work would have been delayed by six months at a minimum. However, if for some reason, it is impossible to reach an agreement on a particular issue, it will, of course, be necessary to apply conventional spatial planning to ensure the success. Then
each municipality will be responsible for the planning, according to the Planning and Building Act, within its own borders.

Some of our projects may be seen as preparation before spatial planning is actually applied. This is the case with our storm water project. At other times our projects need to be reviewed according to the environmental law, which was the case for our fish trail project and a canoe trail project as well.

3. Planning for restored fish migration

In the river Emån we have the largest and probably the fastest growing natural sea trout population in the world. The world record for catching natural sea trout by fly-fishing was set in Emån in 1993. The world record sea trout weighed 15.3 kg.

In the late nineteenth century the migrating salmon and sea trout were able to swim 140 kilometres up the river. The migrating fish was of great economic value to the people along the river.

When water power plants were built in the Emå river system, in the early days of the previous century, the power companies were obliged to build fish ladders for salmon and sea trout. In the nineteen forties, this obligation was substituted by an obligation to put spawn of salmon and sea trout into the lower part of the river each year. This practice was kept up until 1990. The wild salmon and sea trout was then only able to swim 25 kilometres up the river. In 1990 it was commonly agreed that introducing spawn was harmful to the wild population and this practice was discontinued.

Within the Emå River Project, five of the Emå municipalities have been trying to restore fish migration in the river during the last decade of the nineteenth century. These five municipalities have agreed that the migrating fish shall have access to all areas in the main channel that were open for migration before the power plants were built. They have also agreed to cooperate and to help each other to negotiate with the power producing companies and to take responsibility for the planning of the project of building seven new fish trails at seven water power plants.

The Emå River Project has been negotiating with one of the power companies about permission to build fish trails at four power plants for several years. An important first step was taken in 2000, when two new fish trails were built to circumvent two power plants at Finsjö. Mönsterås municipality has agreed to take on the ownership of these fish trails. The power company has agreed to accept a reduction in power production up to an equivalent of 5000 Euro per year, during an evaluation period of five years. All five fish trail municipalities have agreed to share the other costs for the fish trails during this time. The fish trails at Finsjö cost about 292 930 Euro. This cost was covered by the Emå River Project (70 %) and by the EU 5b initiative and the structural fund for agriculture (30 %).

The fish trails were reviewed according to the environmental law. A formal permit was not necessary however. All local stakeholders were invited to a consultative meeting. Fortunately, they were all in favour of building the fish trails.

When the sea trout and salmon are rising in the river in August this year, they will have access to 20 new kilometres of river. Their spawning grounds will have increased by 20%. To increase the repopulating rate in these areas, we have moved 100 spawn from the lower parts of the river in 1999 and again in 2000. This procedure will be repeated in 2001.

This year we are investigating the possibilities for fish trails at two power plants further up the river. Hopefully these will be built some time during the next five years.
We hope that all the salmon and trout will have access to the natural spawning grounds in the main channel of the river within the next ten years. Hopefully we can persuade the authorities to review the old permits for the water power plants in order to force the power companies to assume responsibility for the migration of fish and new fish trails in the river Emån.

4. Planning for water management

Another field of conflict is connected to the large variations in flow in the river Emån. During extremely dry summers the flow may be smaller than 2 m³/s at the mouth of the river. And during a really intense melt water season (statistically, once every 200 years) the flow may increase to 200 m³/s. Both extremes create problems for the people along the river and for the biological life within the river. During a dry summer there is barely enough water for the migrating fish, for drink water production, for the industry or for irrigation purposes. On the other hand, during the melt water season, there is often flooding of the farmland, especially in the floodplains.

There is one particular problem that deserves to be mentioned: On the coast, there is a large pulp factory that is depending on the river for supplying process water. However, this large industry may not, according to the law, use the river water in August if the flow is smaller than 3 m³/s at the river mouth. This is stipulated to ensure that there will be a sufficient water flow, for the trout and salmon, to find their way into the river during the spawning season.

On behalf of the Emån River Project, the Swedish Meteorological and Hydrological Institute has made a water management plan for the river Emån. The main purpose is to guarantee a minimum water flow of 4.5 m³/s upstream the mouth of the river.

There are 45 water power plants with dams in the Emån watershed. The water flow at nine of those dams will be calculated, and regulated according to the water management plan. The plan is based on historical meteorological and hydrological data from a thirty-year period (1965-1995).

Presently the plan is being introduced to the water owners and to the waterpower companies that will be affected by the change in regulation. Hopefully they will support a five-year test of regulation according to the water management plan.

In the next three years we are planning to install 12 new stations for measuring of the water flow in the rivers, and ten new stations to measure the water levels in the dammed lakes. A computer will process the data from those stations, and from the meteorological stations in the area. One person will be employed to manage the water flow according to the water management plan.

There have been several drainage projects in the area during the last 100 years. At present, three new flood protection projects are investigated. Two projects in the main channel, and one in one of the tributaries.

The Swedish Board of Agriculture is investigating whether it is possible to decrease the flooding of farmlands along the river without risk to the sensitive fish fauna or to the environment in a larger perspective.

5. Planning to decrease the negative effects of storm water

During the last 20 years the pollution by storm-water has been coming into focus. In the Emån river basin, we have made a mapping of all storm-water production. This includes both the towns and the roads within the watershed. As a result, each municipality has got a GIS report with information about the volume and of the chemical pollution of storm water in the storm-water catchments in each town. All storm water collected on hard surfaces like roofs, tarmac or in industrial sites, is
included in the investigation. It also includes a risk assessment for each storm water area. This risk assessment is based on the calculated information about the pollution in the water as well as on the biological and recreational value and the retention capacity of the recipient. The reports also suggest possible measures in order to reduce the environmental impact.

A special report presents the environmental risk classification in a watershed perspective. 33 hotspot storm-water areas are identified. Most of which are situated in the upper part of the river basin. Two of those will be taken care of during the next two years. If necessary funding is available, we shall make plans for measures at the other 31 hotspot areas. A common storm-water policy is introduced and is currently being accepted by the Emå municipalities. The next time they are revising their general plans, they will be able to include measures for storm water treatment.

A special report concerning the storm water production on the roads was delivered to the Swedish National Road Authority. The entire road net is described in a storm water perspective and the environmental impact on the water system is calculated. Seven ‘hotspot’ sites were identified where the need for measures is very great and 34 sites with great need for some kind of measures. The report also includes classification of traffic, material, bridges, salt, and accidents. The SNRA can now use this information when planning for restoration of roads within the watershed.

6. Planning for a reduction of nutrients in the river water

The river Emån transports 329 tons of Nitrogen into the Baltic each year. In the Emå river basin, the arable acreage is 8% of the total area. 82 % of the area is forested.

40 % of the nitrogen and 35 % of the phosphorus in the Emå water emanates from the arable land. Farmland and forests together are responsible for 73 % of the nitrogen and for 62 % of the phosphorus content. Municipal wastewater is only responsible for 12 % of the nitrogen and 8 % of the phosphorus.

When planning for reduction of nitrogen and phosphorus, it is therefore necessary to reduce the pollution from the fields and forests. The landowners must be persuaded to recognise, and to accept, that they must play an active part in the planning for nutrient reduction.

The Emå River Project has encouraged the landowners to start ‘watercourse groups’. 195 landowners, with 25 % of the able land, are now active in 17 watercourse groups. Each group is planning how to decrease the pollution by nutrients from their own farms and forest.

Each farmer has made an inventory of his farm and described how the fields are cultivated, how many cattle there are and how manure and other fertilisers are used. The nutrient balance has been calculated for each farm in year 2000. Each farmer must now find ways to reduce the loss of phosphorus and nitrogen from his farm. Each watercourse group must set a goal for decreasing the loss of nutrients to the environment during the next five years.

These are a few examples of how different water uses can be introduced into the wider spatial planning in a broad sense, within a river basin, in view of the Water Frame Directive. Sometimes, however, spatial planning at the formal level can be avoided. At other times, the legal procedure is necessary to ensure that a specific goal can be reached.
Figure 1: the river Emå watershed is situated in the southeastern part of Sweden.

Figure 2: eight of the 12 Emå municipalities are cooperating in the Emå River Project
Figure 3: 33 storm water hotspots were identified in the towns.

![Map of storm water hotspots in the towns](image)

Figure 4: Land use in the Emå river basin

![Pie chart of land use](image)
Figure 5: origin of nitrogen in the Emå water.

- Fields, 40%
- Grazing, 5%
- Forest+, 22%
- Forestry, cutting, 6%
- Outfall on lakes, 12%
- Wastewater plants, 12%
- Privat wastewater, 3%

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Session 2bis:

Practical Integration of the Different Components of River Basin Planning
PRACTICAL SESSION 1: Rijnwaarden

Public Participation and Integrated River Management: the Rijnwaarden Case Study
Rhine River Basin, The Netherlands

Brief introduction to the project:

Marita Cals
Manager Rijnwaarden project on behalf of RIZA6, The Netherlands

1. Project area

The Rijnwaardensche Uiterwaarden (forelands in the municipality Rijnwaarden) is a nearly 1,000 hectare measuring part of the flood plains of the Rhine, close to where the Rhine enters the Netherlands from Germany. The project area is part of a 21,000 ha covering project ‘De Gelderse Poort’ which aims to enhance river related nature in this transboundary region in Germany and The Netherlands. The flood plain area of Rijnwaarden concerns a project that was started, like many other projects in practice, without any relationship with the Water Framework Directive. However, it is interesting to discuss to what extend the project objectives meet the Water Framework Directive and what gaps are still to fill.

The Rijnwaardensche Uiterwaarden concerns a rather complicated project:

- complicated hydrological situation because it is the area where the river Rhine bifurcates in two branches. Dike heights down stream and safety standards along the rivers in The Netherlands are based upon the water distribution here. Whatever the measures in the planning area will be, distribution of the discharge between these two branches must remain as level as possible both in high and low water situations, both for shipping purposes and for water management downstream.

- multifunctionality of the area. It concerns an area where many different interests and functions play a role;

- the planning process: it is one of the first projects with national, regional and local interests where all stakeholders actively have been participating since the very beginning of the project.

2. Project objectives

Objective is to design a plan for the flood plain area in which both nature and safety are served. This means enhancement of the river related ecological qualities and expansion of the discharge capacity of the major river bed according to the Dutch policy ‘Room for rivers’. Effects of climate change pointing towards sea-level rise and larger variations in river discharges in combination with soil subsidence behind the dikes, puts safety against flooding from both sea and rivers in The Netherlands at risk. Serious high water levels in 1993 and 1995, when 250,000 people had to be evacuated, resulted in the national policy line ‘Room for Rivers’ and the ICPR (International Commission for Protection of the river Rhine) action plan flood defence. Idea is to extend discharge capacity by lowering the floodplains, removing obstacles etc. in stead of dike heightening. This means that the current land use, dominantly agriculture, will be changed into nature area.

6 Institute for Inland Water Management and Waste Water Treatment
The Rijnwaarden project presented (i.e. making a plan for the area) started in 1997 and is about to finish this summer. In fact the final presentation was cancelled this month (May 2001) due to the epidemic mouth and foot disease.

3. Interests involved

The Rijnwaardensche Uiterwaarden Project is a project in which many different present and future values and interests play a role.

Agriculture

There are eight farms in the area for which the prospects look good. The soil of most of the area is suitable for both grassland and arable farming. The meadows are being grazed by cattle, sheep and horses. On the higher grounds incidental crop farming is carried out (maize).

The interests of the farmers are protected by the farmers’ organisation and indirectly by some large landowners. In principle, the farmers’ organisation has agreed to the natural function of the planning area. The farmers themselves are not against nature, but prefer to keep the existing natural values above developing new, dynamic ones. They would like to be included in the management of the natural areas.

The large landowners, most of whom are from old noble families, mainly object to a decrease in land price and the drop in farm proceeds as a direct result of the nature development plans.

Clay and sand extraction

Part of the planning area is owned by earth removal companies, which remove clay for the brickwork industry and for dike building. Sand is used for various building purposes and for constructing embankments. In the past, clay removal has resulted in an increase in the natural values of the area, sand removal in a large lake for recreation: the ‘Bijland’. The most profitable clay has already been removed, but some small-scale removing projects are still possible.

The interests of clay removing are represented by a foundation. Because of the low (economic) quality of the current clay supplies in the planning area, this clay foundation proposes to exchange land for areas nearby where good quality clay is still available.

The interests of the sand removal companies are represented by a central agency. The proposals of this sand agency to start large-scale sand removal projects have so far been rejected by the government.

The removal concessions (where, how much and how deep clay and sand allowed to be extracted) may influence the actual time planning for execution of the design and will have important financial impact

Water management

The river Rhine is the main transport route for national and international shipping between the port of Rotterdam, other parts of the Netherlands and Germany.

In order to avoid a continuous need to improve the dikes as a result of higher water levels, measures must be taken to lower the peak water level in the planning area. This peak water level used to be considered at a river discharge of 15,000 m³/s, but is now, after the high water levels in 1993 and 1995, considered to be at 16,000 m³/s.

Two authorities are involved: Rijkswaterstaat, the regional water manager is responsible for the water management of the forelands and the river. The water management behind the dikes and dike maintenance are the responsibility of the local Water Board.
Recreation
The ‘Bijland’ is an important area for intensive recreation (30,000 holiday makers a year, for the most part Germans); there is a camp site on the higher ground, 2 marinas, beaches and restaurants. The area is managed by a Recreation Board.

Angling can be enjoyed throughout the entire planning area. There is a network of foot paths and cycling tracks throughout the whole area.

The interests of the intensive forms of recreation in the planning are protected by the Recreation Board and the Dutch Association of Anglers. In addition there are individual entrepreneurs (leaseholders of camp sites, restaurants, marinas etc.) and other holiday makers (cyclists and walkers) who have an interest in the planning area.

Nature
The planning area includes two important natural areas with important fluvial vegetation and low dynamic clear water with floodplain forests at the edges and, for example, a Cormorant colony, a Beaver colony, some rare salamanders and a species of toad. Beside this, lake the ‘Bijland’ is an important resting-place for Geese in winter.

The development plan aims at increasing the natural area, including large-scale dynamic riverside areas.

The interests of nature are protected by Rijkswaterstaat, the Regional Government, the Dutch Countryside Service (DLG), the State Forestry and the German municipality Kreis Kleve.

Living and working
The activities in the planning area offer a few hundred people part-time or full-time jobs.

The area houses 28 families. About half of the houses were flooded in 1995 during a period of extremely high water. In general there is no flooding in these houses at average high water levels, but the access roads to these houses are flooded much more often, in which case some of the residents have to use small boats to move between their houses and the winter dike. When the high water level is extreme, the residents are evacuated.

A good infrastructure is of importance to all the users of the planning area.

Other interests
The planning area has important archaeological, cultural heritage and natural values. These values are of common public interest and the authorities must take these values into consideration. The interests of archaeology and cultural heritage are also protected by the local history group.

Part of the soil of the planning area is contaminated to a greater or lesser degree with, among other things, heavy metals. Strict environmental regulations apply for the processing, transport and use of seriously contaminated soil, and these must be taken into consideration. Part of the planning area has been assigned as a zone of silence, an area where disturbing activities are prohibited.

4. Project organisation

Participatory process
Because the greater part of the project area is in private hands and the co-operation to realise the plan has to take place on a voluntary basis, an highly interactive and open planning process has been applied. Within the project objectives hydraulic conditions are steering. Therefor the ministry responsible for water management has taken the lead by request of the regional ministry.
responsible for land use planning. The link between water planning and land use planning is operationalised in the organisational structure.

In the project group (the deciding body) all authorities that bear responsibility for a certain function and financially, are represented. All organisations, involved from a certain interest, are represented in the consultative group.

On behalf of the highly interactive and open planning process a tailor made communication plan has been made. The planning process has been based upon a mixture of consulting and deciding organisational links and upon individual consultations, group meetings and creative sessions. Basis is that during the process stakeholders have the opportunity to think along and advise the authorities. A proper organisation of the process and clarity about who has the power to decide and who to give advise, has been of great importance.

Integration of disciplines and input from stakeholders
In the working group relevant disciplines worked together on an integrated plan. Disciplines represented in the working group are river hydraulics, ecology, hydrology, soil and sediment expertise, landscape architecture, GIS expertise and presentation/communication
The project consisted of the following stages:

- research and inventory
- outlook and vision
- planning and design

At the start of the project, information meetings were organised to give stakeholders complete insight into the goals and the process of the planning. At every project stage, meetings especially designed and adjusted to the needs of the stage concerned, were organised: information meetings, idea-evenings and elaboration meetings for all stakeholders together, bilateral discussions and a ‘open consultation hour’ for small groups or individuals.

Next to the input given in the consultative or project group, stakeholders gave input (oral during meetings and also written contributions) regarding their ideas on important current values and ideas and suggestions about the future development of the planning area. The first draft plan was made on the basis of the ideas and the suggestions sent in, in combination with results from the working-, project- and consultative group.

Several models have been used to assess impact of measures; hydraulic models, hydrological and ecological models and specific methodology for financial assessment.

During the process, at every stage it was clear that and how the influence of the stakeholders was restricted. It was also made clear that not the number of votes or objections was important. The project group made decisions based upon consensus. Arguments with regard to the contents as well as emotional arguments, were taken into consideration. As much as possible, the project group tried to meet the demands of stakeholders, within the boundary conditions, explained clearly from the very start. As mentioned earlier, if a suggestion was not honoured, the reason was explained.

5. Results / Rijnwaarden in future

The project group based its decisions upon 1) research results and 2) stakeholder’s opinions, ideas and reactions. The interactive stakeholder involvement especially resulted in increased awareness of present landscape features and natural values. Practical information occurred to be complementary to theoretical information and data.
The mentioned inputs have resulted in the following major choices:

- Combination of nature and safety aims: dynamic new nature will be developed at current agricultural sites that will be lowered for safety means.

- Preservation of present natural values: existing nature features, highly valued by researchers and stakeholders will not be changed into dynamic new ones, opposite to the policy formulated for the region.

Preservation or enhancement of current historic landscape features, where ever possible.

- Extensive grazing as nature management measure: next to increased river influence in the project area, extensive grazing will influence landscape features. The present open (agricultural) landscape will be changed into a half-open landscape structure.

- Opportunities for different kinds of water types: conditions are being created for development of hydrologically isolated water bodies, to the river connected streams with different stream velocities, with stable water levels and highly dynamic.

- Preservation of accessibility and housing: brick producing factories, houses and recreational accommodations will have the same rate of attainableness. All houses will be preserved.

- Recreational opportunities: the new design will offer opportunities for recreational use of the area such as walking, angling, cycling and canoeing.

During extremely high water levels, in future the area will look the same as in the present situation: an extended flood plain area covered with water except some small dikes and the brickwork locations. However, underneath the water surface two new water streams will discharge an extra 1000 m³/s.

However, during periods with average water levels, an altered image will occur: Newly dug water bypasses influenced by river dynamics will offer opportunities for river related nature. In other parts, the current, less dynamic conditions with subsequent flora and fauna will be preserved or enhanced. To maintain the required discharge capacity and to increase vegetation structures the area will be grazed with cattle and horses. In other parts vegetation will be mowed or, if necessary, otherwise removed.

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1. Introduction

The subject of this paper is the economic interest of the sand and gravel mining industry in the project ‘Rijnwaardensche uiterwaarden’. The paper is divided into three parts:

- History;
- Project process;
- Future of sand and gravel production.

2. History

The Centrale Industriezand voorziening i.e. CIV in short (Central Building sand supply co.) was founded in 1963 on request of the Dutch Ministry of Public works to execute the then only central building sand project in Bergen (Limburg). Central planning in its heyday. The CIV now has 5 shareholders, all sand and gravel mining companies active in the Netherlands, Belgium and Germany:

- Dekker zandhaggerbedrijf b.v.
- Kaliwaal-Bijland b.v.
- Niba/Grintmij N.V.
- H.W. Paes b.v.
- Van Waning’s zandzuigerij b.v.

In 1968 they started a project in the eastern part of the Lobberdensche Waard (part of the Rijnwaardensche uiterwaarden project) for sand and gravel mining combined with a recreation project. In the early 1970’s they requested a permission for a exploitation permit. This was done after consultation with the provincial government of Gelderland to see if the project was acceptable. The request for the permit was, however, denied due to a change in the political balance, the growing environmental pressure against mining in the river meadows and the hydrological problems attributed to large water bodies next to the river.

Building sand mining companies are, noles volens, used to lengthy procedures, disappointments and continued with the project. In 1981 and 1982, after prolonged negotiations ± 60 ha. of foreland and a farm building were purchased to secure the possibilities of the project. In 1988 a further 46 ha. of foreland were added to a total of 106 ha. This in a timeframe were the possibilities of getting an extraction permit were limited - to put it mildly. The total investment in the project, including interest, is standing at some 11,000,000 Dutch guilders approx. 5,000,000 Euro, as from the 1st of January of this year.

Due to the government decisions and the ‘provinciale taakstelling’ = agreement between government and provinces to allow the production of certain quantities of building sand, the chances for permits increased in 1993/4. The CIV contracted Buro Stroming and Mr Willem Overmars (co designer of the ‘Black stork’ plan in 1988) to design an ‘end-result’ plan for the eastern part of the Lobberdensch Waard. In this plan a new nesting site for the cormorant colony
formed the centre of the project. Areas with high natural value were conserved and enhanced, whilst farmland was removed.

Unfortunately this plan was not chosen from the various possibilities at the time. So the CIV decided to wait for another chance and large investments in land had a very meagre return indeed. This chance came in 1995 when the project De Gelderse Poort (DGP), a nature development plan of some 11,000 ha, was adopted and the whole area of the Lobberdenschwaard was to become a river nature part of the project. Part of the DGP plan is the ‘Rijnwaardensche uiterwaarden’ project, which I will discuss now.

3. Project Rijnwaardensche uiterwaarden, the process

The preparation of this nature development project started in January 1997, date of the first meeting was 2nd of June 1997 and the last meeting took place on the 2nd of May this year. In the light of thirty + years of history, 4 years of preparation for an ‘end-result’ project plan might sound acceptable. In the light of 4 years of investment with no return to speak of, this is a entirely different matter.

The project suffered a major change in its objective, that is to say, the high river water level protection became the leading design motive. This after two years 1993 and 1995 with very high river water levels and the evacuation of some 250,000 people and livestock in 1995.

The research carried out after 1995 gave strong indications that the highest river water discharge would be 16,000 m$^3$/sec and rising further to a possible 18,000 m$^3$/sec in 2020. The river water discharge became, therefore, the main design objective and a complete rethink of the project was necessary. This of course took valuable time, before all the noses pointed in the same direction again.

Valuable time was also lost by the allotment of too much time for certain activities and studies, a tighter time schedule would have allowed for a result in approx. 2 year.

The so called ‘Room for rivers’ project initiated by the Ministry of Public works, made clear that a ‘nevengeul’ = bypass would be necessary to accommodate the 16,000 m$^3$/sec. Further steps would be needed in the future if the 18,000 m$^3$/sec scenario was likely to become a reality. The final design makes the discharge of 16,000 m$^3$/sec possible, while still protecting and improving the ecological value of the northern part of this beautiful meadow. This achieved by protecting the northern part with a ‘kade’ = small dike, from the all too frequent influence of the high river water levels.

Here too, as in the design of Buro Stroming from 1993/4, the agricultural land is removed and transformed into shallow water, marshes and wooded islands for the cormorants. This gives great possibilities to exchange material with no commercial value for building sand, gravel and clay. This is win-win situation, which creates:

- Storage room for non-commercial (but certainly not contaminated) materials which are removed here or elsewhere from the river system in ‘Room for Rivers’ project
- Much needed building materials are produced
- The total project costs can be reduced by combination of activities

The CIV is therefore convinced that the optimum exchange of non-commercial (but certainly not contaminated) material against building sand, gravel and clay will lead to:

- Lower project costs
• More flexible project plans
• Storage possibilities for non commercial (but certainly not contaminated) materials
• Supply to the community of much needed building materials

The possibilities for the extraction of building materials in the eastern part of the Lobberdensche waard are substantial and can contribute to an optimum project. This brings us to the future of sand and gravel production in the Netherlands.

4. The future of sand and gravel production in the Netherlands

In a small country with a growing population and with a ever-increasing demand for work and living space, mobility and leisure; space is a commodity in short supply and multiple space uses are on the rise.

Building materials extraction can create the necessary circumstances in which work, housing, mobility and leisure can be combined.

Protection from higher sea and river water levels will mean a continuous quest for combinations of space use and the building materials to make these plans come true. Building material production is not a goal in itself, it is needed to build our society. The challenge is to combine the possibilities of multiple-space use with the production of building materials.

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1. The project is part of De Gelderse Poort

The area (see Figure 1) covered by the Rijnwaarde Flood Plains project is directly on the German-Dutch border. The project is part of the cross-border landscape development project De Gelderse Poort. This project, in the area bordered by the four towns of Kleve (Cleves), Nijmegen, Arnhem and Emmerich, is an example to the rest of the Community of how nature conservation, economic activity and tourism can be combined. The project covers an area of 21 000 hectares, 10,000 of which are on the German side.

Figure 1: Location of study area

2. Objectives on the Dutch side

In the Netherlands, the project has arisen from the Black Stork Plan. It is based on the separation of functions: the land before the dykes is used for the development of nature and tourism, and the land behind for intensive agriculture. In addition, the layers of clay in the land before the dykes are to be removed and the lie of the land restored to the way it was after the Ice Age. In the land before the dykes, this will produce semi-natural areas with river dunes, semi-open grassland, tributaries and flood plain forests. In addition, typical flood plain animals such as Galloway cattle, Konik horses and beavers are to be brought back in.

Rather than using elaborate mechanical methods of biotope conservation, races of cattle and horses closely related to the original wild races will be used to keep down the vegetation and to increase
the structural diversity. There will be about one animal per two hectares. The animals will remain
in the area throughout the year and will only receive additional fodder during times of flooding
when they more up to the more elevated parts. The job which cattle and horses cannot do, namely
keeping tree growth in check, will be done by another mammal: the beaver.
By way of contrast, the dyke hinterland is to be used for intensive farming, creating a landscape
which is therefore remote from its natural state.

3. Objectives on the German side

On the German side, large parts of the lower section of the Lower Rhine were - independently of
the De Gelderse Poort project - initially identified as wetlands under the Ramsar Convention in the
1980s. Large parts of the rural man-made environment were turned into nature reserves to protect
the Nordic wild geese, large numbers of which hibernate in this area, and to protect the wading and
water birds.

More than 50% of the German area covered by the De Gelderse Poort project is now a protected
area. The combination of a protected area and farming in the same area is to be achieved by means
of a ‘contractual landscape protection scheme’ under which farmers receive compensation for their
loss of income due to conservation efforts under the Water Meadows Protection Programme of the
Federal State of North-Rhine-Westphalia. This will enable the man-made rural landscape with its
hedges, willow trees and small lakes and the typical species of animal such as the white stork
(Ciconia ciconia) and the black-tailed godwit (Limosa limosa) to be preserved.

In addition to the extensive grassland areas, large areas in the land before the dykes are to be used
for the development of flood plain forests. As the areas are strategically well-placed at the
beginning of the Rhine delta, these locations are important for the development of different species
of animals and plants.

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<td>More intensive use for tourism</td>
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Despite or perhaps because of the different approaches taken, cross-border cooperation looked
interesting and seemed to make sense. For this reason, it was agreed to work on a cross-border basis
in 1993. A feasibility study was carried out to consider the general framework and then an overall
cross-border plan was drafted as the basis on which to conduct the project over the coming decades.

4. Interactive planning process

The Rijnwaarde Flood Plains subproject covers 1 000 hectares and occupies an important position
in the De Gelderse Poort project. Although the area concerned is all on Dutch territory, the
German side was closely involved in the planning process.

The planning process was from the beginning characterised by the different approaches taken in the
two countries. For many of those involved - not only the Germans - the aspect of protection of the
existing natural features was extremely important. The idea of creating ‘new nature’, on the other
hand, was a catchphrase which did not mean much to many people. On top of this was the fact that some parts of the man-made environment such as hedges, willow trees and water meadows, which have a high environmental value, were initially to be re-planted in favour of ‘new nature’ without consideration for any other factors.

However, the interactive, open planning process enabled the stakeholders to have their ideas and suggestions included in the planning at the initial stage, e.g. during workshops. In this way, measures to safeguard the existing natural features were incorporated in the plan. This together with the positive results of nature development in other parts of the De Gelderse Poort project meant that any reservations about the idea of ‘new nature’ could be quickly overcome.

The planners started to realise that the combination of a man-made rural landscape and a (semi) natural flood plain landscape increases biodiversity and has a positive impact on the overall ecology in the area and its attractiveness for local residents and visitors.

The result of the planning is a combination of conservation and improvement of the existing features and the development of parts of the natural river ecosystem - tailor-made for the hydrological characteristics.

The disadvantage of such an open, interactive planning process is the enormous amount of time needed to take maximum account of suggestions and concerns expressed by those involved. This put the project timetable back by more than a year.

Some of those responsible for public concerns that played only a minor part during the planning process (e.g. angling) wondered whether it was really worth spending time reading and re-reading extensive studies, drafts and outline plans since the final versions contained only a few paragraphs which dealt with them.

Others had difficulty with the fact that their objections were not 100% taken into account during planning because more important considerations, such as protection against flooding, did not allow this to be done.

In view of the joint result, I do however believe it was important and the right thing to do to take time and to involve the a broad swathe of the public in the planning process.

5. Cross-border aspects

Geese
The main consideration during the planning was, apart from conserving particularly valuable biotopes and man-made landscape areas, the protection and optimisation of the artificial lake De Bijland, since this is the main place at which Nordic wild geese hibernate on the lower section of the Lower Rhine.

The subject of hibernating wild geese was itself a particular problem. While the German part of De Gelderse Poort was identified as a Ramsar site and the geese enjoyed a closed season all year round, the geese on the Dutch side could be shot. It was also feared that the loss of browsing areas in the land in front of the dykes on the Dutch side would increase the numbers visiting the German side - as well as the land behind the dykes on the Dutch side - and that damage due to browsing by geese would increase.

Hunting for geese is now prohibited in the Netherlands as well and there are plans to have the Dutch part of De Gelderse Poort included in the list of Ramsar areas.
One problem which has not been solved is that of the stocks of greylag geese which are increasing as a result of the development of the area. This resident species of breeding bird in the area causes substantial damage to farming in the spring. Since the population size is expected to increase, this raises the question of how stocks can be regulated and the damage made good.

Flooding
One important topic is and will remain protection against flooding. Cross-border cooperation is extremely important in this respect and each country can learn from the experience on the other side of the border.

The interactive planning process during the Rijnwaarde Flood Plains project can serve as an example for the German side. A similar project of sustainable protection against flooding on the German side was approached in the conventional manner - the ready-made plans were presented to the public and only very limited changes could be made. In view of the enormous amount of opposition from the public and the controversial discussion of these plans, what is needed in future is more public participation in the form of early involvement of the public and transparent planning with openness as to the results: lessons can be learned from the positive results of the Dutch planning for the Rijnwaarde Flood Plains project.

Cross-border cooperation
With four different countries and, in Germany, four different Federal States bordering onto it, the Rhine in particular requires a considerable amount of coordination and agreement for any cooperation.

The EU Water Framework Directive provides an opportunity and imposes an obligation to improve such agreement in future. As the Directive creates the international river basin district of the ‘Rhine’, for which a single management plan has to be drawn up, it is essential to optimise cross-border cooperation so that a joint programme of measures can be drawn up which will ultimately lead to the objective of a ‘good status’. The framework of the requirements in this respect goes well beyond the aspects of technical water management and covers, inter alia, nature conservation and agriculture.

Little use has been made in the past of such a uniform approach to the management of river basins, and certainly not for a river basin the size of the Rhine. The Rhine Action Plan of the International Commission for the Protection of the Rhine (ICPR) laid down joint targets, but left the method of achieving them to the individual countries and federal states concerned. The EU Water Framework Directive goes one step further than this by demanding the same approach be taken for the entire river basin district. The application of the assessment criteria on a uniform technical basis alone raises enormous problems since each country and federal state has different was of compiling data and interprets these data in different ways.

6. Implementation of EU Directives

The experience with the implementation of the Habitats Directive provides an indication of the problems that are likely to arise with the EU Water Framework Directive.

The Habitats Directive and the Birds Directive are aimed at establishing a Community-wide coherent network of biotopes requiring protection. The Member States are obliged to notify the European Commission of the names of the areas which meet the criteria laid down in these two directives.

At its first joint meeting, the cross-border working party for the De Gelderse Poort project was confronted with the fact that in the Netherlands a total of 200 hectares are considered to require protection under the Habitats Directive, while the German authority wished to notify 5 500 hectares
- all of it in one continuous natural area, the Rhine Valley, which by chance happens to be separated into two parts by political borders. In view of the different assessments made using the same technical criteria, there were numerous problems which also put a considerable strain on the cross-border cooperation.

Only when the criteria had been discussed in detail and defined more closely on both sides of the border and all nature-related data had been evaluated did a new picture emerge showing genuinely valuable areas of approximately the same size on either side.

Notification of the areas was submitted recently, several years late.

Hopefully, lessons will be learned from these mistakes when it comes to implementing the EU Water Framework Directive.

In view of the short timetable for implementing the Directive, there is no time to repeat these mistakes.

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PRACTICAL SESSION 2: River Drôme

The River Drôme: Water Resources Development and Management Plan:  
Overcoming water problems in a sub-catchment  
of the Rhône-Méditerranée-Corse Basin, France

Brief introduction to the project

Didier Jouve  
Project Manager  
District d’Aménagement du Val de Drôme (DAVD), France

General aims

- To present a successful example of coordinated/integrated management at local level in southern Europe (case study)  
- To identify key factors which facilitate/restrict dialogue (case study)  
- To see how this example can help us appreciate the potential of the Water Framework Directive (general thoughts of participants, discussions) and the obstacles to be overcome in setting up catchment basin/sub-basin management plans

1. General characteristics of the basin

The river Drôme is 106 kilometres long and rises at the edge of the Alps. It flows from east to west - marking the northern border of Provence - and joins the Rhône 120 kilometres downstream from Lyon. The river is mainly fed by water from the Vercors massif, a karstic plateau just to the north, and is primarily a mountain river. From Die, approximately 60 kilometres from the point where it joins the Rhône, the River Drôme becomes a braided river, where the minor bed regularly shifts from one place to another and multiple channels are formed as the water flows over the gravel, which criss-cross one another to resemble plaited hair. Between Die and Crest, for 40 kilometres, the riverbed alternately narrows – sometimes passing through gorges – and widens when it crosses the alluvial cones of its tributaries.

The rate of flow varies considerably, from 1 m³/second when the water level is at its lowest, to up to 300 m³/second once in ten years.

The river Drôme is the backbone of a catchment basin of 1850 km², a rural area with a 45 000 inhabitants. The population is growing. The climate is very pleasant and especially sunny. The Drôme valley has the advantages of both north and south: plenty of water and lush vegetation, and the clear skies, hot summers and lavender fields of Provence. It also offers some superb mountain scenery, which makes it an ideal destination for nature lovers.

In the 19th century, there were many thread, textile, silk and paper mills along the river but these disappeared in the first part of the 20th century. Today, the main economic activities are farming and tourism.

There are two distinct forms of farming:

- Lowland farming, in the lower valley, geared to the large-scale production of oleaginous crops such as maize and sunflower seeds, and also arboriculture.
• Mountain farming, with a speciality product, clairette de Die, a sparkling wine, the
cultivation of aromatic plants such as lavender and a very developed organic sector (crops
and livestock). In the mountain areas, farmers are developing economic links with tourism.

Tourism is not concentrated in any one place, and most visitors come for family holidays in the
countryside. Many camp and around 50% are from abroad, Holland in particular.

Clearly, the two main economic activities of the Drôme valley depend closely on the river.
Lowland farming, with 3,000 hectares of irrigated land, consumes large quantities of water, and
tourism is centred on the river and its activities: bathing, canoeing and fishing.

In the past the river carried along huge quantities of gravel but as upland areas were abandoned in
the 20th century the forest grew back - this significantly reduced erosion, so less gravel came down
to the river. On the other hand, in the last thirty years much more gravel has been carried away
downstream; the combined result of less gravel reaching the river from upland areas and more
being taken away downstream is that the riverbed is now 3 metres lower than it used to be and
dykes and bridges etc. built in the 18th and 19th centuries are at risk.

Irrigation, encouraged by the European Community, which still grants irrigation subsidies, has
developed considerably. The systems mainly use water from the river. Today, the rated power of
the pumping equipment is equivalent to the natural levels which may be reached in summer, i.e.
around 1.5 m³ per second. The requirements of maize are greatest when the water level is at its
lowest and tourists are present, in July and August. In 1990 there was a severe drought and the river
dried up for 10 kilometres. A bitter conflict broke out between the irrigators and other users, which
did a lot to raise local awareness.

Before major work was carried out during the period 1990 – 2000, the river had very high levels of
organic and bacteriological pollution. No district had satisfactory water purification facilities. To
comply with health regulations, bathing was prohibited in almost 80% of the river, periodically or
permanently. Moreover, because there were no proper treatment facilities, new building was
impossible or prohibited in many communes.

2. Steps towards a comprehensive strategy: development of the ‘SAGE’

In 1982, forward-thinking elected representatives began to envisage a comprehensive strategy for
the river and took steps to draw up a river contract, following a new procedure introduced by the
State. In 1986, with EC support, they managed to obtain financing for the preliminary studies and I
was recruited. In 1987 and 1988, we carried out the preliminary studies, trying to incorporate all
aspects of the problem: water resources, gravel, pollution reduction/removal, the promotion of
tourism. However, as a new local group, we were unable to take on problems which were then the
exclusive responsibility of the state authorities.

In 1989, our draft Contract, concerning sewage purification and restoration and enhancement of the
river banks was approved by the Ministry of the Environment but the préfet of the Drôme, who
wanted it to include a dam proposed by his administration, refused to sign it.

In 1990 there was a severe drought, which brought local conflicts over water use right out into the
open. Unauthorised pumps were installed in the river because crops were at risk. Naturalists and
fishermen protested, and farmers took turns to guard their pumps with guns; the river dried up for
10 kilometres and 8 tonnes of fish were washed up on the lowland gravel. The State authorities in
the department were pushing for a dam to be built upstream but local resistance was fierce. The
matter was put before the Ministry for the Environment which, aware of the need to promote a
more global approach, suggested that the local authorities embark on an experimental water
planning and management scheme (SAGE - Schéma d’Aménagement et de Gestion des Eaux).
The first step was to set up a Committee which would bring together users, authorities and other players. At first, it was unofficial; in 1994, after the law and implementing decrees were published, the Commission locale de l’Eau (CLE) [Local Water Committee] was officially established. From 1992 to 1996, it adopted an approach, proposed by the agences de l’Eau [water agencies, which operate at basin level], which proved very effective. The concept was nothing new: survey the situation, identify the problems, work out various possible options, select an option, draw up a list of measures to be taken to achieve the objective and schedule and finance the work to be done.

What was new was to bring together players who were all concerned with the same river but between whom there had been no dialogue up until then: i.e. the water authorities, health and agricultural authorities, elected representatives, farmers, quarry owners' representatives, fishermen, hikers, and naturalists.

The preparation of the SAGE took over three years. Jean Serret, Chairman of the CLE, was in charge.

When the work was completed, at the end of 1997, the SAGE was unanimously approved by the Committee (with one abstention), ratified by the communes, the Department of the Drôme, the Rhône Alpes Region, and the Rhône Basin-Mediterranean-Corsica Committee.

The SAGE contains many provisions relating to the protection and management of rivers and groundwater and notably prohibits the removal of gravel from the major bed. It freezes the amount of irrigated land at the 1995 level. It fixes the minimum flow which must be maintained downstream from the pumping equipment at all times and decides how much water should be kept available for release in the event of an emergency, when coordinated crisis management policies will be applied. The SAGE encourages monitoring of the river and monitoring of biodiversity in the area.

The SAGE has legal force: any citizen may invoke it to challenge any administrative decision which conflicts with it.

Conclusions of the SAGE were incorporated in the second river contract, signed in 1999 for seven years, and many of its provisions are now being implemented. We have a clear path to follow over the coming years and a team has been set up to achieve the objectives. However, nothing can be taken for granted.

3. Areas for further work

To conclude, there is room for improvement in the following areas:

- **Long-term financing**
  How can we set up a monitoring system for the SAGE that is self-financing in the long term? The current arrangements are supported by various institutions under multiannual contracts, but to ensure that regular action continues we need permanent instruments, hence stable financing mechanisms.

- **Public policy coordination**
  It does not make sense to subsidise - and thereby encourage - activities which cause problems if practised to excess, and then subsidise repair of the damage. This applies to agriculture, industry, infrastructure…
  The global approach at catchment basin level is already effective but will be even more so if it embraces other relevant public policies.
Promoting water consciousness
In the 14 years we have been working for the river, we have (partly) achieved a goal whose importance we had not imagined: rebuilding the relationship between the local people and the river. We have seen how collective awareness has supported our work; we can only hope that such awareness will develop on a larger scale, because we all know that the most serious issue at stake on this planet in the 21st century will be the quality of water, its protection and its fair distribution.

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PRACTICAL SESSION 2: River Drôme (continued)

The point of view of

Jean Serret
Chairman of the Commission Locale de l’Eau (CLE)

Coordinating water resource management: the example of the Drôme

The following is a summary of the main topics covered by M. Serret.

- The players and organisations involved
- The institutional structure needed to support the process (e.g. establishment of specific bodies, etc.)
- Those who played a key role in finding solutions
- Identifying the factors that contributed to success
- The SAGE and its preparation: did it change anything, or simply institutionalise things that were already happening?
- Acceptance of solutions by the different players: were there any problems?
- 10 years later: new challenges; is the process running out of steam?

Additional points

Presented by Jean Serret
speaking on behalf of the originally scheduled farmers’ representative

Water: an economic asset in farming, a social asset in rural development

- The impact of farming on water resources (quantity, quality, ecological status of watercourses)
- Farmers and the coordination process: their role (help or hindrance), their expectations, their misgivings
- The results of coordination: the impact on farming - good or bad? If bad, how have farmers been compensated?
- The future: in a changing world, with a changing CAP and a new Framework Directive, how do farmers see the future, what kind of dialogue will there be, what constraints, what opportunities?

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7 Editor’s note: owing to unforeseen but entirely unavoidable circumstances, the presentation by Jean Serret was abbreviated from that originally planned, and the third component ‘point of view’, scheduled for presentation by a farmers’ representative, was cancelled. However, Jean Serret was able to present some points that would have been covered by the third speaker.
Session 3:

Transboundary River Basin Planning in the Context of the EU Accession Process
OVERVIEW PRESENTATION

The EU Water Framework Directive
Key elements for cross border river basin planning
in EU Candidate Countries

Helmut Blöch
Head of Water Sector, DG Environment
European Commission

1. Introduction

“Water is not a commercial product like any other, but, rather, a heritage which must be protected ...” (First Sentence of the EU Water Framework Directive 2000/60/EEC)

The European Union has just thoroughly restructured its water policy. The EU Water Framework Directive has come into force on 22 December 2000, with the following main objectives:

- expanding the scope of water protection to all waters, surface waters and groundwater, and achieving ‘good status’ for all waters within 15 years
- water management based on river basins, ensuring cross-border cooperation
- ‘combined approach’ of emission limit values and quality standards, plus phasing out particularly hazardous substances
- getting the prices right
- getting the citizen involved more closely

As for Candidate Countries as well as the existing Member States, it will shape water protection and water management in the new millennium, at the same time providing a sound and long-term basis for technical and financial planning as well as political decision taking.

2. Consequences and challenges for Candidate Countries

The Water Framework Directive will with immediate effect be legally binding for all 15 Member States, as well as part of the Acquis communautaire for negotiations on EU enlargement and thus for Candidate Countries in preparing themselves for joining the Union.

EU water policy and legislation will be a major challenge for the Candidate Countries, in terms of scope, capacity building as well as infrastructure. At the same time Candidate Countries have a lot to offer:

- not only many pristine water courses to be preserved in their ecological integrity, with the Water Framework Directive taking a holistic approach to water quality, with ecological status as the main line of thrust;
- but also considerable knowledge and experience, and distinct success stories on transboundary cooperation.

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This contribution reflects the views of the author and not necessarily those of the European Commission.
The challenge for the Candidate Countries, as well as for the present 15 Member States, will be to assemble knowledge and experience, in administrations at all levels, in the scientific community, with water users, consultancies etc. and, last but not least, in the NGO community, all targeted on a successful river basin planning. The Water Framework Directive has got a distinctly spatial dimension, covering the whole river basin and all its impacts on waters, and addressing water protection in a much more holistic way than past policies:

- setting the objective of good ecological status rather than just addressing certain physico-chemical parameters,
- addressing groundwaters and surface waters (rivers, lakes and coastal waters) and the interrelation between them and with wetlands and other water-related ecosystems.

In almost the whole of continental Europe we share our river basins, with water not respecting administrative or political borders. This fact, and indeed the positive experience gained in certain river basins with cross-border cooperation on water protection, is the reason for one of the Water Framework Directive's most innovative feature, the obligation to base future water management on river basins, not on administrative entities. This approach offers challenges in terms of planning, capacity building and cooperation at local, regional, national and cross-national level:

**Box 1: The challenge of the size of river basins: Examples**

**Danube river basin**
- shared between 15 countries: Albania, Austria, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, FYROM, Germany, Italy, Moldova, Romania, Slovak Republic, Slovenia, Ukraine
- river length (Danube) 2.780 km
- basin size 817.000 km²

**Labe/Elbe river basin**
- shared between 4 countries: Austria, Czech Republic, Germany, Poland
- river length (Elbe) 1.165 km
- basin size 144.000 km²

**Odra/Oder river basin**
- shared between 3 countries: Czech Republic, Germany, Poland
- river length (Odra) 912 km
- basin size 119.000 km²

**Rhine river basin**
- shared between 9 countries: Austria, Belgium, France, Germany, Italy, Liechtenstein, Luxembourg, Netherlands, Switzerland
- river length (Rhine) 912 km
- basin size 119.000 km²

The implementation schedule of the Water Framework Directive provides not only for ambitious objectives, but also for an ambitious time schedule, particularly in the preparatory phase leading to the river basin management plants being established.
Box 2: The challenge of the implementation calendar of the Water Framework Directive

- formal transposition into national legislation: December 2003
- analysis of characteristics and environmental impacts: December 2004
- economic analysis within the river basin: December 2004
- monitoring programmes operational: December 2006
- river basin management plans completed: December 2009
- river basin management plans implemented: December 2015

3. The challenge of protecting our regional seas; the role of EU legislation on urban waste water treatment and on nitrates pollution from agriculture

Let us also look beyond the rivers themselves: All the rivers, be them shared between Candidate Countries or between Candidate Countries and existing Member States end up in sensitive regional seas, Baltic Sea, North Sea, Black Sea, Northern Adriatic Sea and Northern Aegean Sea. In particular eutrophication is a considerable problems for all these regional seas. This leads to the issue of already existing pillars of emission control-based EU water legislation requiring planning and implementation efforts for the Directives on Urban Waste Water Treatment and on Nitrates Pollution from Agriculture. Both these 1991 Directives have already in themselves elements of a river basin approach. Only careful preparation in their fields will deliver the necessary input to the river basin management plans under the Water Framework Directive.

Box 3: Urban Waste Water Treatment Directive

- emission-oriented legislation aiming at domestic and comparable waste water
- sewerage and waste water treatment in all agglomerations above 2,000 population equivalents
- biological treatment as standard requirements
- additional nutrient and/or phosphorus removal in the whole catchment of 'sensitive areas' (such as the Baltic Sea, North Sea, Black Sea, Northern Adriatic, Northern Aegean)
- Technical and economic planning crucial, as this Directive requires the construction of considerable infrastructure and is the most expensive Directive for Candidate Countries.

Box 4: Nitrates Directive

- emission-oriented legislation aiming at nitrates pollution from agricultural sources
- phase out eutrophication of surface waters by agriculture, and of nitrates contents above 50 mg/l (i.e. the maximum limit for drinking water) of all waters
- two-level approach: mandatory measures in 'vulnerable zones', i.e. waters with eutrophication (or in danger of becoming so) and/or nitrates contents above 50 mg/l; voluntary measures such as promotion of good agricultural practices in other areas
- monitoring system as assessment tool as well as planning instrument
4. Ongoing cooperation at river basin level

Important steps in getting on track cross-border river basin planning have already been taken. During the 1990s three major International River Conventions involving Candidate Countries have been created:

- Danube River Protection Convention
- Labe/Elbe River Protection Convention
- Odra/Oder River Protection Convention

All of them have, during the past years, taken decisions to use the existing cooperation as a platform to develop a river basin management plan for those basins in accordance with the objectives and obligations set out in the Water Framework Directive. In terms of preparatory work for the Directive, progress of work in particular in the vast Danube river basin looks promising. The European Commission is, as in the case of the Labe/Elbe and the Rhine, leading a working group involving all riparian countries.

The Labe/Elbe - a regional success story: In terms of phasing out pollution, this river can duly be considered a success story. Being one of the most polluted rivers of Europe in the early 1990s, this river is - due to the joint efforts on Czech and German territory and cooperation within the Elbe River Protection Convention - now home to the salmon again. Nevertheless - as indeed for a range of other rivers in Europe - such progress is no reason for complacency; a lot of efforts still have to be taken.

5. Conclusions

- Europe's waters are in need of more protection, in need of increased efforts to get them clean or to keep them clean, as emphasised by reports recently published by the European Environment Agency.
- The Water Framework Directive provides us both the ambitious objectives and the tools to achieve this objective. Cross-boundary cooperation leading to coordinated river basin management plans is one of the pillars of the Directive.
- The Water Framework Directive is ambitious, clear and legally enforceable as regards environmental objectives, deadlines and key tools such as cross-border river basin management. It is at the same flexible within those river basins as regards approaches how to reach these objectives.
- Following an initiative by the European Commission, there will be an unprecedented cooperation within a **Common Implementation Strategy**. This strategy will involve Candidate Countries as well, both in working groups developing guidance documents leading to a common technical and scientific understanding and the testing of those documents in 'pilot basins' both in existing Member States and in Candidate Countries.

Let us take up the challenge of water protection, one of the great challenges for the European Union, as it approaches the new millennium. Let us seize the initiative generated by the present political process on the Water Framework Directive for the benefit of all Europe’s citizens and water.
PRACTICAL SESSION 1: Danube River Basin

CASE STUDY PRESENTATION

The Role of the International Commission for the Protection of the Danube River (ICPDR) in Protecting and Managing International Waters and Ecosystems

Joachim Bendow
Secretariat of the International Commission for the Protection of the Danube River

1. Background

The Danube River Basin is not only the geographical catchment area of the second largest river of Europe, but it has played in the past and still plays today an important role as a cultural and historical centre of political, social and economic development in Europe.

The Danube River is 2,780 km long and drains 817,000 km² with a mean annual water volume of 6,550 m³/s discharged into the Black Sea.

The basin area includes all of Hungary; nearly all parts of Austria, Romania, Slovenia, Slovakia and FR Yugoslavia; significant parts of Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Moldova and small parts of Germany and Ukraine.

Areas smaller than 2,000 km², where the DRPC similarly does not apply, are left out of consideration.

The present population living in the DRB is about 83 million. Out of which 57% is living in urban areas. The share of population connected to public water supply varies from 29% in Moldova to 98% in Germany representing an average of 74%.

The share of population branched to public sewer system varies from 14% in Moldova to 89% in Germany representing an average of 52%.

Based on the national projection figures, it can be anticipated that the population living in the Danube River Basin will by the year 2020 remain at its present level.

The Danube River Protection Convention is the legal frame for cooperation of the contracting parties to assure environmental protection of ground and surface waters and ecological resources in the Danube River Basin. Out of 13 countries in the Danube River Basin, eleven states and the European Commission have signed, and most of them have ratified the Danube River Protection Convention (DRPC) which came into force in October 1998.

Objectives of the Danube River Protection Convention:

- Sustainable and equitable water management;
- Conservation, improvement and the rational use of surface waters and ground water;
- Control discharge of waste waters, inputs of nutrients and hazardous substances from point and non-point sources of emissions;
- Control floods and ice hazard;
- Control hazards originating from accidents (warning and preventive measures);
- Reduce pollution loads of the Black Sea from sources in the Danube catchment area.
Recognising individually and responding in common to the obligations of the DRPC, the Danube countries have established the International Commission for the Protection of the Danube River (ICPDR) to strengthen regional cooperation.

It is the institutional frame not only for pollution control and the protection of water bodies but it sets also a common platform for sustainable use of ecological resources and coherent and integrated river basin management.

2. The social and economic context in the Danube River Basin:

- Regional social and economic disparities
- The particular situation of transition countries and the requirements for EU accession

An in-depth analysis of the social and economic context of the different countries in the Danube River Basin is necessary to understand the problems of cooperation and the efforts to be undertaken to achieve common regional and global goals.

The analysis of economic disparities shows a clear trend of a west ñ east decline of the GDP from the upstream countries like Germany and Austria, with about 25,000 US $ per capita and year (in 1997), to the downstream countries of which the Ukraine accounts for less than 1,000 $ per capita and year.

The middle and downstream Danube countries in transition are facing serious economic and financial problems to respond to the objectives of the Danube River Protection Convention and to implement measures for pollution reduction and for environmental protection as required for the accession to the European Union.

This analysis shows also the need to assist countries in transition and makes evident the responsibilities of the international community to respond to regional and global concerns of environmental protection.

The particular situation of the Transition Countries and requirements for EU Accessions:

- Restructuring and modernising the legal and institutional framework and administrative systems;
- Establishing development policies and programmes as well as funding mechanisms in compliance with international standards of modern marked economies;
- Initiating privatisation and establishing new links for international economic cooperation;
- Further harmonising of national legislation with EU Directives and standards.

*Danube Environmental Programme*

The UNDP Global Environment Facility and the EU through its Phare and Tacis programs, have provided since 1992 in the frame of the Danube Environmental Programme, international assistance to develop appropriate mechanisms and planning tools for the implementation of the Danube River Protection Convention.
3. Planning Process and Participatory Approach in Project Implementation

**Operational and Organisational Arrangements:**

National and Regional Planning Workshops have been organised in each of the middle and downstream Danube countries to analyse causes and the effects of water pollution and to develop policies guidelines, strategies, and projects for pollution reduction and water management.

**Participatory Approach:**

Involvement of public and private sectors, NGOs and international organisations in the planning process:

- 11 National Planning Workshops
- 11 National NGO Consultation Meetings
- 6 Regional Workshops for coordination of joint strategies and actions
- Joint Ad-hoc Technical Working Group for development of common Danube / Black Sea strategies for pollution reduction, with particular focus on nutrients

How many people participated?

- National Experts for elaboration of National Reviews : 60
- Participants in National Planning Workshops : 345
- Participants in national NGO Consultation Meetings : 218
- 2 Workshops for capacity building and training : 147
- Regional NGO/DEF Consultation Meeting : 50
- 4 Regional consultation and coordination meetings: 245
- Implementation of community based activities (SGP) : 800
- Total Direct Participants’ : 1,865
- Indirect participants through information : 12,815
- Total direct / indirect participants : 14,680

ICPDR policies and activities for water management and pollution reduction.

The ICPDR Emission Inventory (1999) identified important point sources of pollution for municipal, industrial and agricultural sectors.

The UNDP/GEF Pollution Reduction Programme identified in 1998 a total of 535 priority hot spots out of which are:

- 244 in the municipal sector;
- 228 in the industrial sector;
- 63 in the agricultural sector.

Pollution loads of COD from the Municipal and Industrial point sources are most significant from central and downstream countries which do not yet have established adequate waste water treatment facilities. Yugoslavia is outstanding in the central part of the Danube River Basin because of large cities (Belgrade and Novi Sad) situated directly at the Danube River.

Applying the Danube Water Quality Model, nutrient transport to the Black Sea was analysed, indicating a total of 551 kilotons of Nitrogen and 48.9 kilotons of Phosphorus reaching annually the Black Sea from the Danube River Basin. Significant is the Phosphorus absorption in the Iron Gate Reservoirs.
The ICPDR Joint Action Programme reflects the general strategy for the implementation of the DRPC in the forthcoming five years. Particular attention is given to:

- Coordinating and developing the River Basin Management Plan for the Danube River Basin implementing the EU Water Framework Directive;
- Maintaining and improving emission inventories and implementing proposed measures for pollution reduction from point sources and non point sources;
- Restoring wetlands and flood plains to improve flood control, to increase nutrient absorption capacities and to rehabilitate habitats and ecosystems;
- Improving the operation of the Transnational Monitoring Network (TNMN) to assess the ecological and chemical quality status of rivers, including establishing respective water quality standards;
- Establishing lists of priority substances and revising recommendations on BAT and BEP to assure prevention or reduction of those substances;
- Operating and improving the accidental emergency warning system (AEWS), considering its use also for flood warnings, establishing classified inventories of accidental risk spots and developing preventive measures;
- Minimising the impact of floods through applying the UN-ECE Guidelines on Sustainable flood Prevention and developing action programs for sustainable flood prevention;
- Developing methodologies and establishing domestic and a basin wide water balance (Danube River and its main tributaries) taking into account surface- and groundwater.

In the framework of the ICPDR Joint Action Programme (Five-Year Nutrient Reduction Action Plan), 243 committed investment projects have been identified out of which 156 are in the municipal sector and only 44 in the industrial sector. This reflects the situation in most transition countries that industries are not operational or using mostly outdated technologies.

Most of these projects, responding generally to hot spots or point sources of emission, are representing national priorities and taking equally into account the obligation to mitigate transboundary effects.

Particular attention was also given to the identification of sites for wetland restoration, which play an important role not only as natural habitats but also as nutrient sinks.

The total investment foreseen in the five-year period 2001-2005 to respond to priority needs is estimated to be about 4.404 billion Euros covering the following sectors:

- Municipal waste water collection and treatment plants: 3.702 billion Euros
- Industrial waste water treatment: 0.267 billion Euros
- Agricultural projects and land use: 0.113 billion Euros
- Rehabilitation of wetlands: 0.323 billion Euros

For the downstream countries in transition, the investment needs in relation to the per capita income represent an enormous burden. Countries affected by the Balkan crisis have highest investment needs.

Romania, Bulgaria and Bosnia & Herzegovina are presently lacking the financial capacities to respond to investment needs. These countries will have to define their investment programs for the period from 2005 to 2015 to respond to international and EU environmental standards.
4. Perspectives for international co-operation and financial support for programme implementation

Considering the economic and financial situation of transition countries and conflicting interest for the allocation of scarce resources and taking into account the regional and global responsibilities, it is evident that the international community has the obligation to provide necessary support to develop appropriate financing mechanisms taking into account transboundary and global interest of protection of international waters.


- GEF Danube Regional Project: 15 million USD
- ICPDR: 16.5 million USD
- ICPDR Joint Action Programme: 3.2 billion USD
- World Bank - GEF Partnership: 280 million USD
- EBRD - Project Support European Union: 4 billion USD
- Bilateral Support: 163 million USD

TOTAL: 13.1 billion USD

River Basin Management - ICPDR River Basin Management Expert Group (RBM EG)

The Expert Group will carry out the following main tasks:

- Coordinate the identification of the River Danube Basin District;
- Coordinate the analysis of the characteristics of the River Basin, the review of human pressures and impacts on the water status;
- Develop a concept for reporting and cartography;
- Develop a concept to produce a River Basin Management Plan for the Danube River Basin;
- Coordinate all activities to set up a River Basin Management Plan, including the programme of measures to reach good status;
- Develop a concept for public participation and prepare appropriate information for dissemination to interested bodies and the public about the RBM / EG activities;
- Coordinate the activities in the Danube Basin with implementation activities of the EU.

Work programme of the RBM EG

- Development of maps and GIS;
- Definition of typology and reference conditions of surface water bodies;
- Identification of artificial and heavily modified water bodies;
- Methodology for description of groundwater bodies;
- Identification and assessment of pressure and impact on surface water bodies;
- Review and analyse causes and effect from human activities on groundwater bodies;
- Description and analysis of protected areas;
- Economic Analysis.

UNDP/GEF Danube Regional Project: Strengthening the implementation capacities for the nutrient reduction and transboundary cooperation in the Danube River Basin.

The UNDP/GEF will further support the River Basin Management through the forthcoming Danube Regional Project, in particular with the project component 1.1: Development of policy guidelines for river basin and water resources management.
The main activities to be carried out are as follows:

- Identifying River Basin Districts (RBD), in particular the assignment of coastal waters and groundwater bodies;
- Developing common approaches and methodologies for pressure and impact analysis;
- Implementing the common approaches and methodologies for pressures and impact analysis at the national level;
- Applying the EU Guidelines for economic analysis and arrive at the overall economic analysis for the Danube River Basin;
- Developing RBM tools (mapping, GIS, remote sensing, etc.) and related data management including the arriving at the typology of surface waters and the relevant reference conditions;
- Identifying pilot river basin and apply common approaches, methodologies, standards and guidelines in observing also the link to the Working Groups of the EC;
- Develop concepts and programmes for workshops and training courses in order to produce the River Basin Management Plans and to strengthen basin-wide cooperation.

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PRACTICAL SESSION 1: Danube River Basin (continued)

CASE STUDY PRESENTATION

Public Participation in the Danube River Basin Planning Process:
Conclusions/Recommendations and Examples from a CEE NGO Workshop on Improving
Public Participation in the Preparations for the Water Framework Directive

Rayka Hauser
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1. Background

The Water Framework Directive (WFD) demands integrated approaches to river basin management, involving, inter alia, public participation and international co-operation in transboundary basins. Considering the complexity of these issues and the time consuming processes they involve, they need to be addressed by EU applicant countries already at the present stage, in order to meet the basic WFD requirements at the time of accession.

The challenges and opportunities for enhancing public participation in the CEE countries preparations for the WFD were discussed at a CEE NGO workshop, organised by the WWF Danube-Carpathian Programme and the Global Water Partnership.

The WFD public participation requirements can be a real challenge in large international basins, such as the Danube basin, encompassing countries with different status related to the EU (Member States, Accession Countries and non-applicant countries), as well as with different traditions in civil society involvement. In order to obtain a comprehensive overview of the various obstacles and issues in these countries, as well as to develop a basis for future concerted action within international basins, NGOs from all CEE countries were invited and participated in the conference, regardless of their status related to EU accession.

2. Public Participation in the Danube Basin Planning

The majority of presentations, discussions and conclusions referred to the Danube basin, as the most international river basin with various local and transboundary water management initiatives, and with well-established international structures. Case studies outlined the involvement of the public and in particular of NGOs, at different planning levels in the basin.

Danube Basin level

The International Commission for the Protection of the Danube River (ICPDR) is the coordinating body for international aspects of the Directive’s implementation. ICPDR is promoting public participation in the planning process, through financial support to the ICPDR Information System, including the Danube Watch, as well as operating networks such as the Danube Environmental Forum (DEF), MLIM and AEWS. NGO observers attend the ICPDR Meetings, and provide significant input to the work of the Commission (for example in the establishment of an Ecological Expert Group).

The Danube Environmental Forum (DEF) as an NGO platform with combined local and regional structure, established in 1999 to promote NGO participation in government fora, programmes and initiatives. The DEF network and operation is still under development.
Regional and sub-basin level

Examples include the Tisza Platform, established after the Baia Mare accident, for the monitoring and surveillance of its long-term effects on the river ecosystems, as well as for the transboundary Tisza basin planning. The platform includes 16 organisations and has provided valuable input to the work of the EU-set up Baia Mare Task Force.

The Lower Danube Green Corridor between Romania, Bulgaria, Ukraine and Moldavia, with a commitment for 900,000 ha of existing and new protected areas, as well as restored wetlands, is an example of regional cooperation among governments and NGOs. The initiative involves two non-applicant countries. WWF and local NGOs are working closely with the governments for the implementation of the Green Corridor. The long-term vision is to extend the corridor to the entire Danube River.

National level

A successful example is the development of a network of Bulgarian NGOs, based on a number of structures: an e-network (Bluelink) including NGO website with information about activities, donors, including links to other websites; general NGO e-mailing list (NGOs@bluelink.net) and mailing lists on specific topics (e.g. the Kresna case), etc.; regular NGO meetings and annual National Conferences; commonly adopted procedures for the election of representatives; linking with international platforms and forums, etc.

Local level

The Drava Ligue, a local Croatian NGO, leading the protest of local communities to the plans for construction of ecologically damaging hydropower dams on the Drava River, and networking with Hungarian NGOs to obtain stronger support for their position.

3. Basic questions

Based on our shared experiences, the participants derived answers to some basic questions:

Why is civil society participation important for the successful implementation of the WFD?

- It is our democratic right to be involved in decisions regarding environmental management and social and economic development.
- NGOs and the public provide locally-held information, essential for decision making and for the development of measures to achieve ‘good status’.
- NGOs and the public provide increased pool of ideas and knowledge for policy formulation and decision making;
- Ownership of plans improves the chances of successful implementation;
- NGOs can play a ‘watchdog’ role concerning implementation of EC legislation; where public participation is strong, government accountability also increases;
- NGOs have a key role in strengthening public awareness and in empowering public responses to government actions;
- Long practice of public involvement will help gradually build a culture of cooperation to handle conflicts and tensions.
**Who should be involved in the dialogue?**

- Civil society organisations;
- Professional associations;
- Users’ associations;
- Private individuals;
- Academic researchers and analysts.

**What does public participation really mean?**

- Transparency and information sharing, but also:
- Consultation, and also:
- Involvement in the policy process, and joint decision making, and also:
- Initiation by stakeholders, and also:
- Monitoring and control.

**To what extent does the Water Framework Directive provide for public participation?**

Article 14 of the WFD (Public information and consultation) has the following specific requirements related to the planning process:

1. **Member States shall encourage the active involvement of all interested parties in the implementation of this Directive, in particular in the production, review and updating of the River Basin Management Plans.** Member States shall ensure that, for each River Basin District, they publish and make available for comments to the public, including users:

   (a) a timetable and work programme for the production of the plan, including a statement of the consultation measures to be taken, at least three years before the beginning of the period to which the plan refers;
   
   (b) an interim overview of the significant water management issues identified in the river basin, at least two years before the beginning of the period to which the plan refers;
   
   (c) draft copies of the River Basin Management Plan, at least one year before the beginning of the period to which the Plan refers.

**4. Conclusions**

While the WFD sets key requirements for public involvement in the planning process, they are not yet sufficient. Any idea to reduce public participation to simply publishing timetables for the development of River Basin Management Plans (RBMP), and consultation on already identified water issues and the draft RBMP, is likely to lead to failure during implementation.

Public involvement is needed not only in the commenting of the final product, but also in the entire planning process from its very early stages, namely in the:

- characterisation of river basins;
- analyses of impacts and pressures;
- economic analysis of water use.

Public involvement is required at all geographical scales and decision-making levels, including local, national, sub-basin and basin levels, as well as at the EC planning level, ensuring well functioning links among all these levels. NGOs should take advantage wherever possible of
existing or planned structures and seek (and be allowed to) contribute as actively as possible in the formation and activities of, for example, river basin councils, GWP-facilitated Water Clubs, stakeholder water parliaments, and others. New structures should be established, where needed. Regional CEE NGO platforms need to be strengthened and their permanent presence in international structures institutionalised.

For the EC level in particular, CEE civil society inputs are required in the EC-Member States' WFD Common Implementation Strategy Working Groups on:

- Heavily Modified Waters;
- Economic Aspects;
- Monitoring;
- Best Practices for RBM.

An additional working group on Public Participation needs to be established.

NGOs have a specific role and responsibility in organising and streamlining public involvement. In order to take a pro-active approach to effective participation, NGOs need to meet a number of challenges:

- Capacity building, in particular in water legislation and policy issues, while there is already significant local technical expertise in place;
- Funding: NGOs have limited resources, especially for participation in transboundary processes. A proposed GEF Danube Regional Project would provide future opportunities for NGO participation in the work of the ICPDR. The mobilisation of further funding sources is needed to ensure full participation in river basin planning;
- Better organisation and networking on the local, national and international levels; and
- Development of a spirit of cooperation and constructive dialogue with governments.

5. Next steps

In order to help meet these challenges, the participants agreed on the following:

- Analyse existing relevant CEE NGO expertise, and establish a CEE ‘Expert Pool’ and an informal NGO network, through which expertise can effectively be supplied to relevant bodies, such as the ICPDR and the EC.
- It was suggested that GWP support national NGO workshops in each (GWP-participating) country, in order to maintain momentum developed by the conference and to seek common ground on inclusion of environmental NGOs into current or planned national Water Clubs.
- Pilot projects throughout the region, demonstrating participatory approaches and good practices, should be designed, funded and implemented, in order to highlight how creative, and ‘alternative’ approaches to water management can strengthen WFD implementation.
- Current large-scale investment projects should be used as models for the benefits from early public involvement (e.g. the Kresna Gorge case).
- NGOs will initiate a process for drafting Guidelines on Public Participation, and will offer these to the EC for discussion and adoption. Alternatively, NGOs will use them throughout the region as a benchmark against which to measure the performance of the EC, Accession Countries, and other bodies such as ICPDR.
- A CEE stakeholder conference on dams and the WFD will be organised. The conference will be financially and technically supported by the GWP. The World Commission on Dams Guidelines will be used as a basis for discussion, in order to raise awareness of
environmental, socio-economic and financial issues related to dam construction, and to openly discuss whether alternatives exist and/or are being considered.

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CASE STUDY PRESENTATION

Transboundary Planning for Sustainable Development of the Tisza River Basin in the Aftermath of Toxic Mining Spills

Kalman Morvay
Tisza–Szamos Trust Fund, Hungary

1. Introduction

The cyanide spill at Baia Mare and the heavy metal escape from Baia Borsa, Romania in last year highlighted the needs for an effective international cooperation in this multi country watershed, such as the Tisza River Basin.

The existing bilateral agreements (water quality control, flood protection, etc.) and the international conventions (Danube River Basin, ESPOO, Seveso II. etc.) could not provide a comprehensive solution for such a case.

It became clear that the common and close cooperation between countries in the river basin would only give efficient results to protect the human life, the nature and environment not only in the water bodies in the river Rhine but in the entire watershed also.

The first step of this activity would be the integrated river basin planning.

One of the importance of this process is inter alia that the Tisza River Basin is shared by EU member state in the near future (Hungary), EU-Accession countries (Romania and Slovakia), and non-EU countries (Ukraine and Yugoslavia). It may be happened that an EU member state will environmentally be threatened by EU-Accession or non-EU countries.

2. Organisation/Coordination/Cooperation

The assessment of the disaster by several national and international organisations (UNEP/OCHA, US EPA, WWF, Baia Mare Task Force) have concluded that the only way to improve the environmental condition in the region is to establish a close cooperation between the countries in the river basin, i.e. Federal Republic of Yugoslavia, Hungary, Slovakia, Romania, Ukraine.

Inventory of Hot Spots

The first initiative came from the Environmental Ministers of Hungary, Slovakia, Romania and Ukraine to prepare a list of hot spots in each country to know where are and what kind of pollutants threatening the river basin.

The ICPDR (International Commission for the Protection of the Danube River) prepared this inventory under common methodology used by the Elbe River Working Group in similar situation. The inventory includes potentially High Risk Spots (Industrial Hot Spots and Tailing Ponds): 24 in Romania, one in Slovakia, 6 in Ukraine and 11 in Hungary. (FRY was subject to sanctions at that time, so was excluded from the survey). The numbers of Lower Risk Spots in the four countries covered by the survey was almost one hundred.
Environmental Programme for the Tisza River Basin (EPTRB)

The second idea was born by the Joint Expert Commission in Cluj and later in Ushgorod to prepare a comprehensive environmental plan for the entire Tisza River Basin. The Hungarian Ministry of Environment invited his counterparts from Romania, Slovakia, Ukraine and FYR to discuss the EPTRB. A concept paper was prepared and discussed during a workshop held in Budapest, March 8 – 9, 2001. The participants were representatives from the five riparian countries, from DG Environment of the European Commission and from the ICPDR.

The following is a summary of the proposal prepared by the workshop (quoted from the Minutes):

**Short-term components**

- the priority list of accidental risk spots has to be revised soon and concrete projects for preventive measures and improved control and warning mechanism should be developed;
- Romania and Ukraine recommended additional bilateral projects to be part of the EPTRB;
- flood prevention and environmentally sound flood protection programme should be prepared.

**Mid- and long-term components**

- drafting a Common Work Programme (CWP) as an implementation of the EU Water Framework Directive (WFD) to the Tisza River Basin;
- for the coordination of the implementation of the WFD an organisation structure should be established. The responsible working groups, leading countries, chairmen and contact point should be identified,
- national members of ICPRD Expert Group should also be participating in the Tisza River Basin EG to assure co-ordination and coherence in implementing the WFD in the whole Danube River Basin;
- the main elements of the organisation system would be
  – a Tisza River Basin Management Expert Group – TRBM/EG;
  – an Ad Hoc Drafting Group for the Work Plan.
- the final CWP should be discussed and agreed by the Tisza Basin Countries and further at ICPDR;
- the testing of the guidance documents developed in the frame of EU Water Directors should also be considered.

**3. Legal and Institutional Framework**

**Hungarian Government Commissioner's initiatives**

To find common platform of collaboration and collect all initiatives into one pool the Tisza-Szamos Government Commissioner of the Hungarian Prime Minister Office has suggested to create the ‘Ecological Protection Convention for the Tisza River Basin’. This Convention would be adopted by the riparian countries and would provide a framework for further comprehensive collaboration in the watershed.

The initiative was announced at the Environmental Summit held in Bucharest, April 28–29, 2001.
The idea was helpfully accepted by the European Council, Strasbourg, where technical help was offered for the preparatory work and financial support was also promised for implementation after the signatures by the five countries.

After having signed the Convention an implementing institution (Committee, Secretariat or an Institute) can be set up by the delegates from the riparian countries and the international organisations (EU, UNEP, etc.). The main aim of this body would be to determine the necessary monitoring system, further development activities on the river basin and to supervise the implementation.

*Declaration of Flood Protection in the Upper Tisza Valley*

The heaviest and highest floods swept through the Tisza Valley during the last three years triggered the flood protection authorities to change their strategies. It was agreed that the conventional bilateral, cross-border flood prevention is not sufficient and it should be replaced by a new approach.

Therefore the Budapest Declaration on Flood Protection was signed by the Ministers responsible of flood control from the five countries in Budapest, on May 25, 2001.

This will be the basis of the new water management agreement in the Tisza River Basin.

4. Planning And Financing

The national budget includes sources for the river basin development components in all the riparian counties.

The rational utilisation of all the resources (national and international) under a comprehensive river basin planning would only be sufficient.

Each country has its own priority of development which is contradictory some cases to the priorities in the other countries. For example, the development of mining industry is first priority in Romania; thus the development of forestry is very important in Ukraine, but not in Hungary; the flood plain agricultural production is imperative in Hungary and FYR.

Therefore it is advisable that the international financing institutions (IFIs) can have a role to govern the planning/project process to avoid unnecessary actions and to incorporate more resources into the development.

*UNDP/GEF initiative*

Taking into account of the disasters (cyanide and heavy metal spills, highest floods) the UNDP decided to launch a comprehensive development project for the entire Tisza River Basin.

Now it is in the project formulation phase and the different stakeholders are identified.

Preparatory discussions, meetings are under way to identify the potential players nationally and internationally. The interests of different sectors e.g. environmental protection, nature conservation, industry, agriculture, fisheries, forestry, water management: flood control and irrigation, tourism are reconciled.

When the representatives are identified both nationally and internationally, several workshops will be held to determine the type and size of the project activities.
An organisation body is also looked for who will managed the project.

The representatives of UNDP’s different sections are visiting the countries concerned and the potential stakeholders frequently.

The Tisza–Szamos Trust Fund and the Regional Environmental Centre (REC) are also surveying the potential players. The REC is busy with NGOs and local governments and the Trust Fund is dealing with the central government sectors (ministries and authorities).

The resources of UNDP would be to use GEF Programme 12 of Integrated Ecosystem and Natural Resources Management, and partly the EU Structural and Cohesion Funds and ISPA.

Glossary

BMTF - The International Task Force for Assessing the Baia Mare Accident, (known as the ‘Baia Mare Task Force’);
CWP - Common Work Programme;
EPTRB - Environmental Programme for the Tisza River Basin;
EU - European Union;
ICPDR - International Commission for the Protection of the Danube River;
IFIs - International Financing Institutions;
NGO - Non-Governmental Organisation;
REC - Regional Environmental Centre;
TRBM/EG - Tisza River Basin Management Expert Group;
UNDP - United Nation Development Programme;
UNEP - United Nation Environmental Programme;
UNEP/OCHA - UNEP/Office for the Co-operation of Humanitarian Affairs;
US EPA - United States Environmental Protection Agency;
WFD - EU Water Directive Framework;
WWF - World Wide Fund For Nature.

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The Baltic Sea constitutes a sensitive ecosystem with a very long water retention time, estimated to approximately 25 years. In its Northern part, the water is almost drinkable, while in the South-western part it is saline, with influx from the North Sea. At an overall scale, the water may be described as brackish. Large-scale salt water influx from the North Sea are only experienced irregularly, sometimes with several years in-between. Accordingly, the Baltic Sea is not ecologically designed to cope with large amounts of nutrients, e.g. in terms of urban wastewater or run-offs from agriculture. Regrettably, the Baltic Sea has already received significant input of nutrients from not only this type of sources, but also airborne from Western side countries transport activities. The impact has been very tangible in terms of widespread algae bloom during warm summer periods and oxygen deficits devastating to the flora and fauna in large parts of the Baltic Sea. Particularly, shallow coastal waters - spawning grounds to several fish species - has seen dramatic ecological consequences following this eutrophication process. In some, e.g. the Bug Lagoon in Poland, commercially valuable fish species like perch and pike-perch have virtually disappeared and been replaced by various non-commercial ‘scrap-fish’ (non-commercially valuable). Also in the deeper basins of the Baltic Sea, e.g. the Bornholm Basin – a spawning ground for Cod – have seen increasing problems following eutrophication, e.g. decline in the Cod population.

Accordingly, these problems - in combination with deep concern related to the occurrence of a range of chemicals in the sea ecosystem - are considered of highest importance in the Baltic ecological community, e.g. as stated in a number of Helcom publications. Focusing on eutrophication as a key environmental problem - although ignoring the large-scale airborne contribution (approx. 50%!) - it is widely recognised by Helcom that only land-based solutions can amend this problem.

While river basin management as such is still an issue to be more deeply incorporated into the Helcom program, management and planning of coastal lagoons and wetlands - particularly in a transboundary context - have had a key position the Helcom ‘Joint Comprehensive Action Program’ since 1993.

Parallel Demonstration Activities have been undertaken under the umbrella of the so-called MLW project since 1993, supervised by WWF. MLW is an abbreviation for ‘Management Plan and Coastal Lagoons and Wetlands’. The project incorporated activities from 6 large coastal areas - Matsalu and Kiïna Bay in Estonia, Engure-Kemerì in Latvia, Kursiu Lagoon shared between Lithuania and Russia, Vistula Lagoon shared by Russia and Poland, and Odra Lagoon shared by Poland and Germany. In all cases, the activities were following the principles of ICZM - Integrated Coastal Zone Management - which are comparable to those of the Water Framework Directive.

Although the areas in many ways were very different, a number of similar conclusions and experiences could be drawn up regarding the implementation of this transboundary and cross-sector approach. This presentation will outline a number of these conclusions and experiences, and on this basis support the implementation of the WFD, while also urge for strong support to capacity building of the institutions involved in this rather new planning and management approach.
Despite the magnitude of international and regional recommendations, strategies for coastal zone management, conventions etc. emphasising the need for and benefits related to ICZM, the real life implementation of this approach meets continuous obstacles, in terms of lack of buy-in and understanding from authorities at both local and national level.

Significant lessons concerning implementation of ecosystem-based planning and management of natural resources as a corner-stone of sustainable development has been learned.

ICZM – despite a rather long international history with an outstanding back-up from various international fora – is still a fairly new and unknown tool for many public administrations, not least in countries where these administrations are rooted in a very sectoral and top-down mode of operation. A number of constraints hamper the use of ICZM principles. These are summarised in the table.

### Table – Lessons learned during the MLW project

<table>
<thead>
<tr>
<th><strong>Technological constraints</strong></th>
<th><strong>Culture &amp; Society constraints</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• ICZM is heavily based on cross-sector communication, addressing conflicts, public participation - this is new to many participants and many find it difficult to comprehend what is meant by ‘ICZM as an ongoing process’</td>
<td>• Public participation not part of culture: many people do not take part in the civil society, many people living at subsistence level</td>
</tr>
<tr>
<td>• A lot of information is not available</td>
<td>• Transparency and information sharing is only evolving within the Public Administration</td>
</tr>
<tr>
<td>• Sustainable Development Indicators: a new concept (DSR)</td>
<td>• NGOs have small public outreach</td>
</tr>
<tr>
<td>• Cross-sector orientation appears only sporadic</td>
<td><strong>Environmental Awareness constraints</strong></td>
</tr>
<tr>
<td>• Tendency to exclude development side</td>
<td>• Environmental issues are low on the political agenda, gets limited resources and attention</td>
</tr>
<tr>
<td>• No ‘one-best’ analytical framework</td>
<td>• Knowledge about the consequences from environmental degradation to society and development appear to be low, e.g. dams, drainage of wetlands, and regulation and channelling of rivers is still taking place</td>
</tr>
<tr>
<td><strong>Economic constraints</strong></td>
<td>• The future problems are not recognised, particularly the environmental impacts is estimated to increase by at least 40% when the Eastern European countries have restructured their economy</td>
</tr>
<tr>
<td>• Difficult to find funding for institutional follow-up and public participation</td>
<td><strong>Ecological constraints</strong></td>
</tr>
<tr>
<td>• Green funds should be able to facilitate follow-up activities</td>
<td>• A substantial part of lagoon pollution comes from upstream sources</td>
</tr>
<tr>
<td>• Long-term planning has a weak stand compared to short-term gains</td>
<td>• Flooding cannot be solved by further diking: needs upstream wetlands restoration</td>
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<td>• Difficult to replace regulation with economic incentives: framework not in place</td>
<td>• Wetlands are vital ‘organs’ for the river functions</td>
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<td>• Taxes and subsidies are a future tool</td>
<td>• Eutrophication needs upstream management of agriculture and households</td>
</tr>
<tr>
<td><strong>Institutional constraints</strong></td>
<td>• Long-term protection requires change of development patterns</td>
</tr>
<tr>
<td>• Local and regional levels have very little capacity - significant need for support</td>
<td>• Coastal lagoons: dump-site or beauty??</td>
</tr>
<tr>
<td>• Cross-sectoral approach, visions and analysis are not part of the ‘administrative culture’ feed-back mechanisms and pro-active approach not present in many places</td>
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</table>
Further, some additional lessons should be emphasised:

If providing clear benefits to the involved communities prior to initiatives leading to dramatic physical changes, e.g. nature restoration, this will increase changes of success.

Expect an integrated approach to be a long-term process, needing several years to be sufficiently rooted in society.

Base the ICZM approach on local, enthusiastic people, as an informal dialogue is a key tool, particular during initial stages.

Ensuring broad public support to the ICZM plans and their priorities requires demonstration of concrete benefits to the local communities.

Finally, a bottom-line conclusion is, that without being able to address the development situation facing the local communities, support from these for achieving regional and international environmental goals can not be expected - or justified.

The importance of transboundary river basin management was also reflected in the so-called Vilnius Round-table initiated by the World Bank and the German Government. This round-table, gathering a number of professionals from the region, led to the development of the Vilnius Recommendations, which again together with experience from the MLW project and the BAAP project on agricultural management gave solid inspiration for the upcoming, large-scale Baltic Sea Regional Project.

Thus, a number of activities under Helcom will provide valuable experiences for the future efforts related to the implementation of the WFD:

- The Baltic Sea Regional Project (budget 40 million USD, financed by a.o. GEF), which will aim at linking environmental planning, management and awareness raising activities in the marine, coastal and inland areas
- The BaltWet network on freshwater and coastal wetlands under Helcom Habitat
- The general work on river basin management under Helcom Land, as well as related initiatives by the Swedish EPA, the UN ECE Convention on Trans-boundary Water

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PRACTICAL SESSION 2: Baltic Sea Basin (continued)

CASE STUDY PRESENTATION

Lake Peipsi – a Transboundary Lake on the EU’s Future Border

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Summary

Lake Peipsi (Lake Chudskoe – in Russian) is a part of the Baltic Sea water basin and is shared by Estonia and Russia. Estonia is a EU accession country and the lake is likely to become the future border between Russia and the European Union in a few years. The presentation discusses an experience of the transboundary cooperation on Lake Peipsi; outlines potential challenges to implementing principles of the EU Water Framework Directive on the EU external borders in the Baltic Sea area and stresses an important role of the Helsinki Commission (HELCOM) to play in implementation of the WFD in the Baltic Sea basin.

1. Introduction

Management of transboundary waters is complicated since there is not one government to manage international waters and bordering states may have different languages, cultures, as well as different water management legislation and institutional structures. This is especially true for water basins in Europe on the EU external borders, where European legislation is binding only on a part of international water basins. To implement the ‘new EU water policy’ that was formulated within the adopted at the end of 2000 European Union Water Framework Directive (WFD), transboundary cooperation should be developed across Member State borders or even beyond EU member state borders. Therefore, there is a need to evaluate the applicability of the EU Water Policy to the new future border regions with regard to development of institutional mechanisms and policy instruments for decision-making to ensure sustainable use of water resources in international river basins on the European fringe. To illustrate issues and problems connected with implementation of the EU Water Framework Directive in the Baltic Sea basin on the European external border areas, we use an example of the Lake Peipsi basin located on the Estonian – Russian border.

2. Geographical characteristics of the Lake Peipsi Basin

Lake Peipsi is a part of the Baltic Sea water basin: the lake is connected with the Gulf of Finland through second largest river in the Baltic Sea Basin - Narva River. It is the fourth largest lake in Europe. The area of the lake is 3550 km, including 44% on Estonian territory and the remaining 56% belongs to the Russian Federation. The lake is shallow with an average depth of 7.1 m (maximum depth 15 m) and very biologically productive. The local economy depends on the use of natural resources. Main activities in the region are fishing, recreation, subsistence farming, and forestry. Major environmental issues in the Narva River and Lake Peipsi basin are water eutrophication, management of the lake’s fish resources and environmental problems connected with wastewaters originating from oil-shale mines and oil-shale processing industry. Estonia is an EU accession country; hence the Estonian border is very likely to become the EU external border in a few years from now.
3. Legal and institutional framework for transboundary cooperation

In 1997, in five years after the border between Estonia and Russia was re-established, the Estonian Republic and the Russian Federation signed an intergovernmental Agreement on the Protection and Sustainable Use of Transboundary Water Bodies in accord with the UN ECE Transboundary Water Convention (Helsinki, 1992). The objects of this Agreement were the transboundary waters of the Narva River water basin, including Lake Peipsi. In accordance with the agreement, Estonian and Russian governmental established Estonian-Russian Joint Commission on Transboundary Waters (further: Commission).

**Activities of the Estonian-Russian Joint Commission on Transboundary Waters**

The Commission acts as a formal mechanism for organising cooperation across the border, as well as between local interested parties and the two governments. It manages the exchange of water monitoring data, defines priority studies on protection and sustainable use of the resource, and agrees common quality indicators and methods of water testing and analyses. The transboundary cooperation in the Lake Peipsi basin can be named as an example of a successful and cost-effective cooperation. The Commission’s main resource is in its participants’ expertise and track record in collaborative work. Both countries have high calibre experts and Russia has extensive experience in transboundary programmes with other of its neighbours, particularly Finland, which is geographically and culturally close to Estonia. And some of the old Soviet bonds also help ease contacts. A close cooperation has been developed with Estonian and Russian foreign ministries representatives and border guards who help Commission experts to obtain visas and this wait to assist the Commission in timely organisation of joint meeting as well as expeditions on the lake.

In terms of funding, the governments pay costs of the Commission’s secretarial staff, while scientists, interested parties, local authorities and non-governmental organisations (NGO) fund themselves and also receive support to implement the transboundary water agreement from international foundations and organisations. The international funding possibilities are discussed at annual meetings of the Commission and are used to implement priority activities under its working plan. For example, support for the Commission's work is coming from the Swedish Environmental Protection Agency (EPA) through the non-profit Estonian organisation Peipsi Centre for Transboundary Cooperation (Peipsi CTC), with implementation units on both sides of the lake, to develop coordinated environmental monitoring programs and to promote information dissemination in the Lake Peipsi/Chudskoe region. As a result of the Swedish EPA funded projects, nutrient load calculations for the lake basin were accomplished, an electronic communication network was developed that joined all Commission members and experts; the Commission website is to be ready in summer 2001. With the support of the Danish EPA, a strategy for pollution load reduction (phosphorus and organic pollution) was prepared and cooperation with local authorities and businesses was strengthened.

Global Environmental Facility (GEF) through United Nations Development Programme confirmed support for cooperative work in both countries worth US$1M to launch the three-year Lake Peipsi Basin Management Plan. The project is to start in Fall 2001, and the Peipsi CTC will manage the GEF project. This plan will build on existing water management projects in the basin supported by the Danish and Swedish governments and by the European Union. It is important that the GEF will support involvement of local authorities, stakeholders and NGOs in transboundary environmental cooperation that is today in not yet sufficiently developed.

Since Russian funding is leaner even than Estonia's, the European Union's TACIS fund has agreed to provide Euro 2M to boost the basin management program. A range of technical activities is included, such as monitoring and sampling, environmental assessment of pollution and pilot projects aimed at reducing nutrients in the lake. A comparative analysis of the European Union water directive and the Russian Water Basin Management approach will also be done, along with institution building activities and public education.
Separately, the European Union supported a three-year project to develop methodologies for the lake management plan. It concentrates on theoretical and methodological issues of implementation the European Union’s Water Framework Directive on transboundary waters at external borders. Known as MANTRA-East, the programme will involve 10 research institutes from five European countries.

**Preparation of the Lake Peipsi Basin Management Plan**

At its second meeting in late 1999, the Estonian – Russian Joint Commission on Transboundary Waters gave a high priority to developing the Lake Peipsi/Chudskoe Basin Management Plan based on the principles outlined in the EU Water Framework Directive.

In Estonia, the EU accession state, laws and the administrative system are being adapted to the requirements of the EU. As a part of this work the Estonian Water Act is being revised to harmonise with the EU Water Framework Directive (WFD). River basin management strategies for all water basins in Estonia are to be elaborated by 2004 (Marko Tuurmann, pers. comm., 2001). The WFD recommends that the River Basin Management Plans be developed not only between the EU member states but also on the borders of EU member states with non-member states. For Russia implementation of the WFD is not binding but a matter of the government political will. The Estonian – Russian Transboundary Water Commission has adopted a decision to develop the Lake Peipsi Basin Management Plan on the basis of the EU water legislation. Thus, the Russian government made a commitment to implementation of principles of the WFD in developing a transboundary water regime in the Lake Peipsi basin; and it will need to adjust its legislation to integrate it with the EU new water policy.

4. European Water Framework Directive

The EU Water Framework Directive (WFD) objectives are to establish a Community framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater, in order to prevent and reduce pollution, promote sustainable water use, protect the aquatic environment, improve the status of aquatic ecosystems and mitigate the effects of floods and droughts (The Directive, 2000, Article 1). The main innovation of the Directive that allows speaking about introduction of the ‘new European Water Policy’ is that the Directive focuses on a system of quality management and health protection, not on numerically fixed water quality standards and water quality monitoring. That is in direct contrast to sole dependence on uniform quality standards as required by the earlier adopted EU water related legal acts (Europe’s basin blueprint, 2001).

The WFD provides a framework for the development of integrated and coherent water management by way of so-called river basin management plans (RBMP). According to the Water Framework Directive, rivers and lakes will need to be managed by river basin boundaries and river basins covering the territory of more than one Member State will be assigned to an international river basin district.

The principle objective of the directive is ‘to return all natural waters to good status’. Under the Directive’ Member States will have to ensure that ‘good’ status is achieved or kept in all waters achieving good surface water status at the latest 15 years after the date of entry into force of this Directive. A set of procedures for identifying that point for a given body of water, and establishing particular chemical or hydromorphological standards to achieve it, is provided, together with a system for ensuring that each Member State interprets the procedure in a consistent way (to ensure comparability) (Europe’s basin blueprint, 2001).
One of the main obligations under the directive is ‘full recovery cost’ pricing system - the institution of a pricing policy at a level that gives incentive to the wise use of water (Article 9). This applies across all use sectors and amount to a new concept in almost all EU states. By 2010 Member States will be required to ensure full cost recovery, i.e. that the price charged to water consumers – such as for the abstraction and distribution of fresh water and the collection and treatment of wastewater – includes environmental and resource depletion costs, as well the full costs of providing the necessary services.

Involving public in the decision-making
According to Mr. Helmut Blöch of the European Commission, “in the first stages of formulating proposals (for the Directive), … all stakeholders were involved from the beginning. This helped the legislators to focus on the all-important issues such as how to make the law applicable to all waters and equitable to all the taxpayers across the EU (Europe’s basin blueprint, 2001). Under the Directive, it will be mandatory to provide information and encourage participation (Article 14) of all interested parties in the production, review and updating of the river basin management plans on which all future water management will be based. To what extend local stakeholders will be involved in the process, will in fact depend on how effective will be communication strategy of the Directive content to the stakeholders and communities, not to forget that the text of the Directive is quite complicated is not easy to understand to ordinary people.

As the WFD is a rather new legal document that came into force in December 2000, there are much more questions rather than answers on implementation of the directive in Europe and especially on its borders. Implementation of the directive is a volunteer action for a non-member state sharing a river basin with the EU member state. Even if a government of the non-member state adopts a political decision to implement the directive, there are still multiple issues and potential problems connected with its implementation on a territory of a non-member state, starting from capacity of responsible authorities to establishing water quality objective, adopting plans of actions, to reporting to the European Commission on the directive implementation.

Russian water legislation
Today a half of Lake Peipsi located in the Russian Federation, is managed according to the Russian Federation Water Code, a federal law of the Russian Federation adopted in 1995. It contains principles for regulation of water relations; definitions and classifications of water objects; forms and kinds of rights to use water objects; guidelines for the use of water objects; competence of owners and users; competence of state authorities and local self-governments; legal regime of ownership; use and management of water objects; payments for use and pollution of water bodies; guidelines for water protection; procedures to settle disputes on protection and use of water objects; as well as legal regime for individual water management activities. The document sets provisions for the ownership of water resources, establishes procedures for licensing of water use and sets maximum permissible limits on chemicals and their discharges, defines norms for allowable water uses, and regulates the use of water bodies and discharges of pollutants in water bodies. The law sets payments for the use of water resources that are distributed between federal, regional and municipal budgets.

5. Challenges to implementation of the EU Water Framework Directive on the EU External Border

A comparative assessment of the EU and Russian legislations and management practices in the EU, Estonia and Russia, allow concluding that the following potential impediments to the WFD implementation are likely to arise.

The Directive establishes deadline for achievement of ecological objectives but it leaves open to its Member States to define ecological objectives depending on major water use patterns in the water
basin. To define joint ecological objectives, the two countries have to agree on priorities of natural resource use in the Lake Peipsi basin. There have been two precedents of disagreements on resource use between Estonia and Russia in the region: one on fish resource use in the middle of 1990s that was resolved due to the efforts of the Estonian-Russian intergovernmental fisheries commission on Peipsi, Pskov, and Warm lakes; and a conflict on water use for drinking purposes and use of shared environmental infrastructure between municipalities of Narva (Estonia) and Ivangoorod (Russia) that is in the process of being resolved with the assistance of the Estonian – Russian Transboundary Water Commission. Estonia introduced radical economic reforms at the beginning of 1990s and currently receives structural pre-accession support funds from the EU. Due to that, it is likely that differences in levels of socio-economic development of Estonian and Russian sides of the lake area will increase will make it even more difficult to adopt a common definition of ‘good’ status of the waters.

Next serious impediment to development of a joint water management plan under the EU Water Directive is that although also the Russian Water Code addresses issues of economic instruments of water protection such as payments for water use and licensing water use; ‘full cost recovery’ pricing system, the driving force of the EU Directive, is not a part of the Russian water legislation. It is a topic of a separate detailed study to be conducted on to what extend this difference in legislations on water pricing can negatively affect development and implementation of the joint water management plan.

There are also differences in implementation between the two countries in administrative structures and procedures, specific water management practices, including organisation of water monitoring programs, water sampling and analysis methods, approaches to environmental data collection and dissemination as well as institutional set-up. The issue of administrative capacity of institutions for water management on regional level in Estonia and in Russia perhaps will be very critical for implementation of the European Water Framework Directive. River basin authorities to be established on the Russian and Estonian sides of the Lake Peipsi District, have to be able to prepare and implement the Management Plan in accord to the requirements of the Directive and of the national water laws; to coordinate activities with each other, to organise public consultation and participation; and to prepare detailed reporting in EU official languages to the European Commission.

The language barrier is becoming an issue in organising the transboundary cooperation in the Lake Peipsi basin. Historically Estonian experts working on Lake Peipsi during the Soviet times, spoke Russian, today many younger generation specialists in Estonia speak well English but do not speak Russian; while in Russia there are no yet many experts who would speak English.

Problems of financing of river basin authorities on the Russian side will play a decisive role in to what extend the European Water Policy can be implemented in Russia – in Estonia costs of operation of river basin authorities are in the state budget and there will be also assistance of EU PHARE program and pre-accession structural funds for implementation of the Water Framework Directive. Therefore, role of EU policy instruments such as TACIS, could play a very important role to promote implementation of the EU Water Policy on the Russian side.

6. Conclusion: Prospects for integrated water management in the Baltic Sea region

Despite the mentioned difficulties, the cooperation in the Lake Peipsi basin can be named as an example of a successful and cost-effective cooperation. Experience of the Joint Transboundary Water Commission provides broader lessons for organisation of water management on rivers and lakes, especially those shared by countries in transition in the Baltic Sea area. Developing the cooperation in the Lake Peipsi Basin is a challenge; but it is also an opportunity that allows
introducing modern water management methodologies and tools instead of being ‘track-dependent’ of the methods used decades ago.

On the surface, the EU Water Framework Directive and Russian Water Code seem to have a common ‘ecosystem’ approach to water legislation and it would appear there should not be any serious problems with implementation of the Water Framework Directive on the external EU borders. However, a detailed comparative assessment of the EU and Russian legislations and management practices in the EU, Estonia and Russia, shows that there are differences in the two legislations, disparities in procedures, monitoring strategies, environmental data and information gathering, and institutional organisation. Therefore, there is a need to develop step-by-step guidelines for the development of integrated water management strategies specifically for river basins located on the EU external borders. EU policy instruments (TACIS, other) should play an important role in helping implementation of the joint strategies for management of the shared transboundary waters.

As in the situation of the border of Estonia and Russia, joint water commission are important institutions that can effectively coordinate implementation of integrated water management approaches organised by riparian parties as these commissions act as a formal mechanism for organising cooperation across the border, as well as between local interested parties and the two governments. Involving various stakeholders and developing networks will be important parts of the international river basin management plans. There is a need in an international assistance to these joint bodies and local organisations involved in transboundary water management to promote their institutional capacity.

The Baltic Sea Basin is one large international river basin where Lake Peipsi basin belongs; it consists of multiple river basins shared by the Baltic Sea states where majority of the states work actively to implement the EU WFD requirements. HELCOM is uniquely qualified to assist international river basin authorities in developing their international river basin management plans and in exchanging experiences with each other in implementation of requirements of the European Water Policy. HELCOM should become an information and coordination centre in the Baltic Sea basin for preparation and implementation of requirements of the Water Framework Directive.

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PRACTICAL SESSION 2: Baltic Sea Basin (continued)

CASE STUDY PRESENTATION

Poland’s Role in Securing ‘Good Status’ for the Baltic

Adriana Dembowska
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The environmental policy, in the modern understanding of this term, started in Poland in late 80s, due to and in parallel with political and economic changes. However, some signs of new approach to the environment had appeared even earlier, particularly when Poland signed the Helsinki Convention in 1974 and the first national legislation on protection of the environment was adopted in 1980. National Environmental Policy (NEP) was adopted in 1991 and defined new approach and frames for future legislation and policy in the field of environmental protection and management. At the moment new NEP is being agreed with the Government and is being discussed by the Parliament. The main idea of this new NEP is sustainable and integrated approach to environmental issues, including the quality of the environment. In the context of this seminar water management should be mentioned first, but other problems are also important and have their impact on the overall status of the Baltic Sea. All measures, which are to be taken, were prioritised. The most emerging issues for the next two years in the field of water management and protection are the following:

- modernisation and implementation of integrated monitoring system;
- improvement of situation in Baltic Programme ‘hot-spots’ (sites and areas having extreme impact on the state of the Baltic Sea);
- elaboration of the programme aimed at reduction of hazardous substances discharges and losses;
- introduction of integrated pollution prevention and control system.

The following is regarded as medium–term priorities (to be implemented by 2010):

- elimination of discharges of the untreated wastewater;
- 50% reduction of industrial pollution discharged to surface water and 30% reduction of pollution from municipal and diffused sources.

Implementation of the EU legislation will hopefully change the reputation of Poland, which is seen to be the main polluter in the Baltic Sea Area having an anti-environmental policy. Such opinions are based on prejudice and stereotypes rather than on rational reasons. Nobody denies that Poland exerts significant impact on the marine environment of the Baltic Sea. However, there are facts, which should be taken into consideration. Poland is a large country in the scale of the Baltic Sea catchment with a population of 40 million people, which makes up half of total population in the region (Fig 1).

Provided that these conditions are taken into account, it turns out that specific loads of pollution such as nutrients or organic matter from Poland are the lowest among Helsinki Convention Contracting Parties. (Fig. 2).

Poland has some experience in transnational water planning and management, due to active participation in HELCOM work. One of the Commission projects was to elaborate Integrated Coastal Zone Management plans for two Polish lagoons: Vistula (shared with Russian Federation) and Szczecin (shared with Germany). It should be noted that not only plans themselves have been elaborated but also special projects were conducted to promote the implementation of plans and to
raise public awareness. In 2000 the project related to Vistula Lagoon was carried out. It included elaboration of a more ‘user friendly’ version of Management Plan (designed for non-professionals) as well as meeting representatives of local governments, societies, NGOs in order to promote idea of integrated management and to convince them, that both local societies and environment could really benefit from integrated management. In our opinion, this project was successful because this management plan is no longer seen as something extremely sophisticated and imposed by scientists of national government. This year the parallel project is going to be carried out for Szczecin Lagoon and is very much looked forward to.

International Commission for Odra River Protection (ICPO) was also established to create organisational frames for Czech–German–Polish co-operation for the benefit of the environment. It should be mentioned that after the integration process is completed, Odra River and Szczecin Lagoon would be internal EC water bodies. The treaty on Odra River protection was signed in 1996. Its contracting parties are the three bordering countries (Czech Republic, Germany and Poland) plus European Union. The main tasks for the Odra Commission are:

- water quality improvement;
- flood protection;
- ecology, nature and landscape protection.

Other issues, such as spatial planning, land use and international researches, are also taken by the Odra Commission. Besides, new scope of activities is more likely to be added, due to existing plans to improve navigation possibilities on the Odra River (e.g. restoration of navigation in some sections of the river).

A pilot project on Narew River has been carried out to implement Water Framework Directive. Up to now, during the preliminary stage, the evaluation on the environmental state of the river basin has been made. It included analysis of surface- and groundwater resources, water quality, main sources of pollution, natural conditions (protected areas, wetlands), tourism. It should be stressed that Narew River basin is a unique area in the context of nature protection. Three National Parks are located there, among them Bialowieski National Park, that is well known all around Europe, as well as several Landscape Parks and reserves.

During present (preliminary) stage main problems were identified, which are:

- water balance;
- surface- and ground water quality (insufficient sewage systems, insufficient capacity of wastewater treatment plants, improper operation of WWTPs, improper wastewater management in rural areas, extended use of fertilisers in some areas; necessity of improvement of monitoring);
- flood protection;
- lack of legal regulations on river banks protection due to the development of water tourism
- lack of river rules of water management in protected areas.

The main problems mentioned above are to be considered and solved at the further stages of the project. Public discussion on the preliminary project stage has been completed and the elaboration of the river management plan itself has just started.

Implementation of the EU environmental legislation is not regarded in Poland as a new or additional legislation because the its result will be similar to, or even the same, as in NEP. The main difference is that all the measures will be completed in sharper timeframes on the one hand, and under international control, on the other. Although the goal is the same, the way has to be
changed, which is the major impact of e.g. Water Framework Directive. Water authorities, water planning and management, and monitoring do exist in Poland thus only some rules and ways of acting need to be more harmonised and complexed to be in line with WFD.

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Figure 1: Baltic Sea States populations contribution to total population of the region.

Figure 2: Nitrogen load discharged to the Baltic Sea in 1995.
## Annex 1
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# Final Programme Seminar 3 “Good practice in river basin planning”

Brussels, 29 and 30 May 2001

**Master of Ceremonies:** Julian Scola, WWF European Policy Office

**Tuesday 29 May 2001, 8:30 – 18:00**

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<td>Welcome and Introduction</td>
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<td>9:30-9:35</td>
<td>Summary of the main questions/issues to be discussed in the seminar</td>
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<td>9:35-11:20</td>
<td><strong>SESSION 1: INTEGRATED RIVER BASIN PLANNING IN EUROPE AND THE EU WATER FRAMEWORK DIRECTIVE</strong></td>
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<tr>
<td>9:35-10:35</td>
<td>Overview presentations</td>
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<td><strong>SESSION 1: INTEGRATED RIVER BASIN PLANNING IN EUROPE AND THE EU WATER FRAMEWORK DIRECTIVE</strong></td>
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<td>10:35-11:20</td>
<td>Summary, Questions and General Discussion Session 1</td>
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<td>11:20-11:50</td>
<td>COFFEE</td>
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<td>11:50-13:10</td>
<td><strong>SESSION 2: “INTEGRATING” THE DIFFERENT COMPONENTS OF RIVER BASIN PLANNING</strong></td>
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<tr>
<td>11:50-11:55</td>
<td>Introduction</td>
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<td>11:55-12:40</td>
<td>Component examples</td>
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<tr>
<td>12:40-13:10</td>
<td>Summary, Questions and General Discussion Session 2</td>
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<td>13:10-14:40</td>
<td>LUNCH</td>
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<td>14:40-18:00</td>
<td><strong>SESSION 2 BIS: PRACTICAL INTEGRATION OF THE DIFFERENT COMPONENTS OF RIVER BASIN PLANNING</strong></td>
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<tr>
<td>14:45-15:45</td>
<td>Practical session 1: Public participation and integrated river management: The Rijnwaarden</td>
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<td>case study, Rhine river basin, The Netherlands</td>
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<td>14:45-15:15</td>
<td>Case study presentations</td>
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<td>15:15-15:45</td>
<td>Questions and Discussion</td>
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<th>Time</th>
<th>Activity</th>
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<td>Chair: Chris Tydeman, WWF European Freshwater Programme</td>
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<td>Rapporteur: Josefina Maestu, Mediterranean Water Network</td>
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<td>Chair: António Gonçalves, Ministry for Environment and Land Use Plan, Portugal</td>
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<td>Chair: Friz Barth, European Commission</td>
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<td>Chair: Eik Mostert, Centre for Research on River Basin Administration, Analysis and Management (RBA), The Netherlands</td>
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<td>Chair: Craig Woolhouse, Environment Agency, UK</td>
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<td>Chair: Jacqui Cuff, Rural Horizons® on behalf of RSPB, UK</td>
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<td>Chair: Consuelo Gianane, University of Seville, Spain</td>
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<td>Chair: Eric Jagtman, Ministry of Transport, Public Works and Water Management, The Netherlands</td>
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<td>Rapporteur: Erik Mostert, RBA Centre, The Netherlands</td>
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<td>Chair: Marita Cals, on behalf of RIZA, The Netherlands</td>
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<td>Chair: Pieter van Sventer, Central Building sand supply co, The Netherlands</td>
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<td>Chair: Thomas Baume, Kreis Kleve, Germany</td>
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<td>Chair</td>
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Final Programme Seminar 3 “Good practice in river basin planning”
Brussels, 29 and 30 May 2001

Master of Ceremonies: Julian Scola, WWF European Policy Office

### Wednesday 30 May 2001, 9:30 – 16:25

**SESSION 3: TRANSBOUNDARY RIVER BASIN PLANNING IN THE CONTEXT OF THE EU-ACCESSION PROCESS**
Chair: Patrick Murphy, European Commission  
Rapporteur: Charlie Avis, WWF-Danube and Carpathian Programme, Hungary

9:30-12:55
9:35-9:40 Introduction  
Water challenges of the EU-accession process  
Ian Clark, European Commission

9:40-9:55 Overview presentation  
Key elements for successful cross-border river basin planning in EU-Accession countries  
Helmut Blöch, European Commission

10:00-10:40 Practical session 1: Danube River Basin

10:00-10:30 Case study presentations  
The role of the International Commission for the Protection of the Danube River (ICPDR) in protecting and managing international waters and ecosystems  
Joachim Bendow, Secretariat, ICPDR

Public participation in Danube river basin planning: Examples and conclusions from an CEE NGO workshop on "Improving Public Participation in Preparations for the Water Framework Directive"  
Rayka Hauser, WWF-Danube and Carpathian Programme, Bulgaria

Transboundary planning for the sustainable development of the Tisza river basin in the aftermath of toxic mining spills  
Kalman Morvay, Tisza-Szamos Trust Fund, Hungary

10:30-10:40 Questions  
Chair

10:40-11:10 COFFEE

11:10-11:55 Practical session 2: Baltic Sea Basin

11:15-11:45 Case study presentations  
Baltic Sea "status": Marine protection as a driving force for transboundary river basin planning and management  
Henrik Dissing, WWF-Denmark
## Final Programme Seminar 3 “Good practice in river basin planning”

**Location:** Brussels, 29 and 30 May 2001

### 11:45-11:55
**Questions**

**Chair**

### 11:55-12:55
**Summary and General Discussion Session 3**

**Chair (and Rapporteur)**

### 12:55-14:25
**LUNCH**

### 14:25-16:25
**SESSION 4: PRESENTATION OF MAIN POINTS AND DISCUSSION OF A SYNTHESIS NOTE FOR THE SEMINAR**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:25-15:10</td>
<td><strong>Presentation</strong></td>
<td>Summary Reports</td>
</tr>
<tr>
<td>15:10-15:55</td>
<td><strong>General Discussion Session 4</strong></td>
<td>Chair (and Rapporteur)</td>
</tr>
<tr>
<td>15:55-16:05</td>
<td><strong>Presentation</strong></td>
<td>The Way Forward: The development of EU guidelines for integrated river basin planning and management</td>
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<td>16:05-16:15</td>
<td><strong>Final Questions and Discussion</strong></td>
<td>Chair</td>
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### 16:15-16:25
**CLOSE**

**Chair:** Helmut Blöch, European Commission

**Facilitator:** Chris Tydeman, WWF European Freshwater Programme