

**COMMON IMPLEMENTATION STRATEGY  
FOR THE WATER FRAMEWORK DIRECTIVE  
(2000/60/EC)**



**STRATEGIC DOCUMENT**

**AS AGREED BY THE WATER DIRECTORS UNDER SWEDISH  
PRESIDENCY**

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## 1. INTRODUCTION

This Strategic Document is a follow up to the conclusions and general agreements on the need for establishing a Common Strategy for implementation of the Water Framework Directive, which were reached at the informal meeting of EU Water Directors and the Norwegian Water Director in Paris 23-24 October 2000<sup>1</sup>. In line with the conclusions of the Paris meeting, the documents prepared by the French Presidency were used as a basis for the Strategic Document. Conclusions of the Paris meeting have been incorporated into the Strategic Document.

After the Paris meeting Member States and the European Commission jointly developed the Strategic Document in its present form. The EU Water Directors reached agreement on the Strategy under the Swedish Presidency in the meeting held in Sweden on the 2 to 4 May and discussed the Strategy with all Candidate Countries. However, the Strategic Document will be continuously developed in the organisational frame set out by the Implementation Strategy according to the progress of the implementation process.

## 2. GENERAL OUTLINE OF A COMMON STRATEGY

### 2.1 The challenges of implementation

The implementation of the Water Framework Directive raises challenges, which are widely shared by Member States. These include:

- an extremely demanding timetable, (in particular in the 9 preparatory years);
- the complexity of the text and the diversity of possible solutions to scientific, technical and practical questions;
- the problem of capacity building and an incomplete technical and scientific basis with a large number of fundamental issues in Annex II and V, which need further elaboration and substantiation to make the transition from principles and general definitions to practical implementation successful;

A strict limitation of human and financial resources in Member States further adds to the challenge.

Implementing the WFD is a responsibility, which resides fully within the competence of the individual Member State. A **Common Strategy** neither could nor should challenge this fundamental principle of Community environmental law. Moreover, in addition to the shared questions, each Member State undoubtedly will also face specific questions and challenges in the implementation process, related to national, regional and/or local situations and conditions, which can be resolved only by that particular Member State. The Common Implementation Strategy is developed in full recognition and respect for this fundamental principle and these specific situations.

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<sup>1</sup> Norway, represented by its Water Director, is associated with the activities of the EU Water Directors' meetings.

## 2.2 The overall objective of a Common Strategy

The aim of this Strategic Document is to allow, as far as possible, a coherent and harmonious implementation of the framework directive. Most of the challenges and difficulties arising will inevitably be common to all Member States and many of the European river basins are shared, crossing administrative and territorial borders, where a **common understanding and approach** is crucial to successful and effective implementation. A Common Strategy could limit the risks of bad application of the Directive and subsequent dispute.

Focus is on methodological questions related to a common understanding of the technical and scientific implications of the Water Framework Directive. The aim is to clarify and develop, where appropriate, supporting technical and scientific information to assist in the practical implementation of the Directive. Guidance documents, providing advice on operational methods and other supporting documents may be developed for this purpose. However, such documents will have an informal and non-legally binding character and will be placed at the disposal of Member States who wish to use them on a voluntary basis.

The guidance documents produced in the frame of the joint Strategy may form the basis for guidelines, which could be adopted under the Committee procedure. The process established within the joint Strategy could therefore partly be seen as an informal preparation for the Committee procedure for some specific areas. Any follow up for the specific guidance documents should be elaborated on a case by case basis and with view to the competence of the Article 21 Regulatory Committee. The competence of the Article 21 Regulatory Committee is set out in Annex V.

The potential extent of the tasks to be achieved is wide. However, in line with the strategic nature of this joint implementation process a limited number of key activities have been identified on which Member States and the Commission will work jointly. The constructive and productive co-operation between Water Directors and the Commission, which had led to the successful adoption of the WFD should be continued for that purpose and taken to even greater heights. There was a strong support to a continuation of this unprecedented open co-operation on implementation issues, which have traditionally been dealt with individually by Member States and without the active involvement of the Commission<sup>2</sup>. An open and transparent process is necessary as part of a new partnership working method and to ensure a maximum of efficiency for the implementation process.

## 2.3 Outcome of the Water Directors Meeting

The European Community and the Norwegian Water Directors at an informal meeting in Paris 23-24 October 2000 identified the following elements for a Common Strategy for the implementation of the Water Framework Directive:

- The necessity to **share information** between Member States and the European Commission;

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<sup>2</sup> Work, which will be carried out at community level (interested Member States and Commission) does not concern institutional and administrative arrangements, as these are exclusively within national competence.

- The need to inform and involve **the public and promote public awareness** on the key elements of the WFD and issues linked to the implementation of this Directive;
- The need to ensure **coherence** between the implementation of the WFD and **other sectoral and structural policies**;
- The need to ensure coherence between the implementation of the WFD, other water Directives and process and product oriented Directives;
- The need to **integrate activities** on different horizontal issues for the effective development of river basin management plans and implementation of the WFD;
- The need for **capacity building** in Member States for an effective implementation of the WFD;
- The need to involve **stakeholders and the civil society** in the implementation of the WFD;
- The need to promote a **common attitude** towards Candidate Countries of Central and Eastern Europe regarding their possible involvement into activities (this is key for shared international river basin districts); and
- The need to establish **working groups** and develop **informal guiding and supporting documents** on key aspects of the WFD;

Regarding this last point, different issues for which common activities will be necessary/could be established were mentioned during the discussions. These include groundwater, reference conditions, heavily modified water bodies, economics, limits and definition of river basins, methods for the development of river basins management plans, public and stakeholders participation, «significance» levels/thresholds, monitoring and the development of a shared structure for Geographic Information Systems (GIS).

Priorities to be tackled in the context of the Common Strategy are identified in this strategic paper. It is important to ensure that the Strategy is well focused and can be implemented effectively by Member States and the Commission.

The working groups defined in the Strategy will comprise of experts from all/interested Member States and may be chaired by a lead country or the Commission.

## 2.4 Key activities and overall approach

A modular structure has been chosen for the overall Strategy. The main modules are the key activities for the implementation process based on the elements identified by the Water Directors. Each key activity may be subdivided into one or more specific projects. However, no hierarchy is intended for the four key activities presented below:

- Activity 1: Information sharing

- Activity 2: Develop guidance on technical issues
- Activity 3: Information and data management
- Activity 4: Application, testing and validation

The first three priorities have a more horizontal character. They are the key activities for developing a common understanding of the implementation of the Water Framework Directive. All these horizontal activities need to be integrated and made operational in the River Basin Management Plans. Therefore, the necessary link between the issues treated under horizontal priorities needs to be established from the beginning. Activity 4 has a more vertical character and includes the key activities intended for the practical integration of the outcome of the horizontal priorities through testing in pilot river basins.

The overall structure of the Implementation Strategy is presented in Annex I. The modular structure is based on key activities and related projects and provides a transparent overview of the whole Implementation Strategy. The identified key activities are priority for a first important phase of the Implementation Strategy. The modular structure allows flexibility to include further key activities and projects in the future. This should ensure the Strategy is well focused and can be effectively implemented by Member States.

An information sheet is presented in Annex II for each project, which gives a general description of the project and sets out objectives and the expected outcomes. The project information sheets also identify the need for working groups, terms of reference and mandates, and identification of lead countries/institutions and participants of the working groups. Further information on individual projects is presented in additional information sheets. For each project and in particular in view of an efficient application of the guidance document the necessary measures and capacity building need to be identified.

The key activities and their importance are related to different phases of the implementation process determined by the deadlines laid down in the Water Framework Directive. These phases may be presented in the following sequence:

Phase	Key activities	Deadline
Phase 1	Transposition; Identification of River Basin Districts.	Dec. 2003
Phase 2	Establishment of reference conditions and reference sites for the inter-calibration network; Preparation for specification of values for the ecological status classification systems; Analyses of the characteristics of the river basin, of pressures and impacts and the economics of water use.	Dec. 2004
Phase 2a	Establishment of Community criteria for assessing groundwater (Commission proposals); Individual Member State action in absence of adoption criteria.	Dec. 2002 Dec. 2005

Phase	Key activities	Deadline
Phase 3	Operational monitoring programmes.	Dec. 2006
Phase 4	Publication of River Basin Management Plans.	Dec. 2009

Priority was given to all projects for which the outcome is needed to fulfil the requirements of Phases 1 and 2 and in particular on the development of guidance documents on the key requirements of the Directive. However, the priorities are identified as issues in their own right. It is not the intention to develop a hierarchy of importance. Moreover, contribution to the work on individual priorities is based on a principle of voluntary participation depending on national prioritisation of resources and national interests. Preparations for making the classification system operational through the identification of reference sites and specification of reference conditions need to be initiated during Phase 2 in order to meet the deadline. Likewise, all guidance documents needed for the analyses of the characteristics of the river basin, of pressures and impacts and for the economic analysis should also be developed over the next 2 years to be of real use for the Member States.

Guidance documents should be developed in a pragmatic way based on existing practices in Member States. These guidance documents should be practical, operational and policy and implementation oriented. Draft guidance should be tested in selected river basins. The practical testing should be part of the development of the guidance document. A first draft should be developed within a short period (several months) and then be tested in a pilot river basin. The documents should be finalised well in advance of the specific deadlines in order to be of real operational use for the Member States. The activities for developing the guidance document should entail the development of a concept for capacity building and training.

In principle working groups should be established for all the projects of high priority as soon as the Strategy is finalised.

In relation to the economic issues, the Common Strategy focuses on an economic analysis of water use in river basins and on the development of guidance documents. Guidance documents are urgently required due to the tight deadlines for completion of the economic analysis of river basins required by Article 5. Therefore, a working group on economics has already been established with France and the Commission sharing the lead. Terms of reference and mandate for this working group are included in an information sheet in Annex II.

The guidance document may form a basis for the work of the Regulatory Committee under article 21 and in particular the guidance documents produced in key activity 2.1, 2.2, 2.5, 2.6, 2.7 and 3.1.

Three other existing projects on reference conditions, on designation of heavily modified and artificial water bodies and on statistical aspects of groundwater have also been included in the modular structure. Work will continue within the specific terms of reference, which was the basis for the funding of those working groups.

## **2.5 Policy Development**

The Water Framework Directive stipulates the need for new Community law for specific areas such as revision and updating of the list of priority substances, setting controls and environmental standards for priority substances, criteria for assessing good groundwater chemical status, criteria for identification of significant and sustained upward trends and criteria for definition of starting points for trend reversals. Deadlines are laid down for the presentation of Commission proposals on these issues. Moreover, the Commission plans a revision of the Reporting Directive.

The Commission will develop such proposals in the same spirit of open consultation and involvement that was employed in the preparations of the proposal for the Water Framework Directive and the proposal for a list of priority substances.

In parallel with the activities under the Common Strategy, the Commission will establish multi-stakeholder Consultative Fora. These fora will include participants from Member States, stakeholders, NGO's and outside experts. Moreover, they are open to participants from the European Parliament. The Fora would be consulted to develop the specific daughter Directives and with a view to examining and, as appropriate, further developing Community water policy, including additional supporting measures.

Issues, which could be dealt with in the different Consultative Fora, in addition to preparation of specific Daughter Directives on priority substances and priority hazardous substances and proposals on criteria and definitions for groundwater, would include the revision of the reporting obligations as well as other proposals for Community measures. Although the fora will focus on policy development they also form an important part of the Implementation Strategy because the development of the specific daughter directives will influence the implementation process.

### **2.5.1 Expert Advisory Forum on Priority Substances and Pollution Control**

In March 2001 the Commission established a consultative group, the "Expert Advisory Forum (EAF) on Priority Substances and Pollution Control" which will be the key working group dealing with all aspects of Article 16 of the Water Framework Directive. The multistakeholder forum involves experts from Member States, Accession Countries, industrial and environmental NGOs. The objectives of the EAF in relation to the provisions under Article 16 are to:

- Provide recommendations and expertise;
- Assist the Commission in preparing proposals;
- Co-ordinate the work; and
- Enhance information exchange and data transmission.

The co-ordination with other related expert working groups, in particular under the Common Implementation Strategy for the Water Framework Directive and relevant international fora like marine conventions and international river conventions will be of particular importance because the input from outside and dissemination of the results will be beneficial for the overall implementation process. The EAF will report to the Water Directors and the Conference of Interested Parties on Community Water Policy introduced in Article 18, paragraph 5 of the Water Framework Directive



would also be associated with this process, when appropriate.

The EAF will lay down its working methods, according to the specific requirements. Due to the extensive work programme, there may be a need of sub-groups, which will be set up accordingly and report to the EAF. The sub-groups will work on specific tasks like quality standards, priority hazardous substances or analyses of priority substances. The information exchange of these groups will be organised through an internet-based interest group.

### 2.5.2 Expert Advisory Forum on Groundwater

The Water Framework Directive does not provide precise criteria for assessing good groundwater status and for the identification and assessment in trends of groundwater pollution.

Nevertheless precise criteria for assessing good groundwater status are urgently needed, as they are the indispensable basis for:

- Separating groundwater being at risk of failing to meet the objectives of art. 4 from those groundwater bodies showing no or only a neglectable risk;
- The finalisation of a tailor-made design of the future monitoring network to art. 8; and
- The proposal of the Commission meeting the provisions of article 17.

According to Annexes II 2.1 and 2.2 Member States shall carry out an initial characterisation of all groundwater bodies to assess their uses and the degree to which they are at risk of failing to meet the objectives for each groundwater body under article 4. For those bodies which have been identified as being at risk of failing to meet the objectives of article 4, further characterisation is required in order to establish a more precise assessment of the significance of such a risk.

According to Annex V 2.4.2 and 3 groundwater bodies at risk also must be monitored for those parameters which are indicative of the impact of the pressures.

Without precise criteria for assessing good groundwater status bodies being at risk can not be identified nor would it be possible to finalise the design of a monitoring program tailor-made to the situation.

Decision on the criteria of assessing good status was postponed when adopting the WFD. According to article 17 the Commission will have to propose measures to prevent and control groundwater pollution.

Such measures shall include *inter alia*:

- Criteria for assessing good groundwater chemical status; and
- Criteria for the identification of significant and sustained upward trends and for the definition of starting points for trend reversal.

The Expert Advisory Forum could work along the following programme:

1. Collection of information and of current state of play with regard to:
  - current problems with groundwater quality in Europe (alternative: to draw

- on existing experiences and reports of EEA);
  - general national strategies for groundwater protection , general objectives;
  - parameters in use on a national level for addressing problems with groundwater quality (e.g. do threshold levels exist for remediation of groundwater quality? are there any, for which parameters? are there intentions to introduce thresholds levels and parameters in the near future on a national level? are there intentions to introduce different classes for groundwater quality in line with the provisions for surface water on a national level? etc.);
  - current practice for remediation of groundwater quality due to impacts of point sources and diffuse sources (e.g. approaches taken, restrictions just for areas with drinking water supply, etc.).
2. Drawing up a first draft of findings;
  3. Workshop with experts to discuss first findings; and
  4. As a result a first draft proposal showing possibilities and alternatives for future criteria should be worked out.

The work of the Expert Advisory Forum should start in summer 2001 and will form the basis for the Commission proposal under article 17.

### **2.5.3 Expert Advisory Forum on Reporting**

The objectives of the work of the advisory forum are:

- More targeted data and information collection, avoid duplication and ensure more efficient use of available data and information;
- Better access to validated data and information at the relevant level for all relevant users across institutional barriers, including national levels, within transboundary river basins districts, the Commission and the Eurowaternet of the European Environment Agency;
- An early transition from the data requirements under the “old” Directives (Fish & Shellfish water, Surface water for drinking water abstraction, Dangerous Substances etc.) to the WFD;
- To streamline the reporting process, including an early, thorough revision of reporting obligations and the water questionnaires under the Standardised Reporting Directive. This should cover both an early transition from the “old” Directives and a clearer division of tasks between reporting under the WFD and the bathing water, nitrates and urban waste water Directives.

The forum should work in the overall frame of the revision of the reporting Directive.

The WFD introduces a new approach to data and information collection and reporting with emphasis on the placing of data and information into a dynamic context of driving forces, pressures, status, impacts and responses (DPSIR). The WFD also introduces a more streamlined reporting process and a clearer distinction between the different information needs of actors at different levels. The main tool for presentation of water status and analysis of impacts and responses is the River Basin Management Plans. Moreover, the plan is the main vehicle for reporting to the Commission.

However a number of additional, preparatory analyses and reports are also of importance. Of particular interest are the analyses, which must be finalised and reported to the Commission 4 years after the entry into force of the WFD. These analyses present information on river basin (natural) characteristics, economics of water use and human impact and pressures (DPI) and to a certain extent also status (S). The results of the monitoring established after 6 years give information on status and impact (SI). The overview of significant water management issues published after 8 years as part of the public consultation process on the draft RBMP adds information on driving forces and pressures (DP). Taken as a whole the final RBMP presents the main information on all the DPSIR elements of the process.

Moreover, the WFD takes over the role of a number of "old" Directives (Fish water, Shellfish Water, abstraction for Drinking Water, Dangerous substances), and consequently also some of the information and reporting obligations under the Standardised Reporting Directive (SRD). During negotiations on the WFD the Commission has committed itself to an early transition from these old Directives and to a streamlining of reporting obligations under those Directives.

A revision needs to take account of several aspects:

- A legal obligation to report every three years on water as required by the SRD. However, this tri-annual report on the SRD could be substituted for a smaller report with a different focus than the preceding two reports;
- The difficulty of a good timing of a radical change in reporting obligations in respect of the ongoing information gathering activities of Member States, including radical revision of the water questionnaires, in order to avoid that information gathered may be rendered obsolete (and work "wasted");
- An early transition to the new ecological indicators and parameters of the WFD and the "loss" of some of the old physical-chemical parameters, taking into account also that the different legal nature of the information collection obligations under the old directives and the WFD.

Data and information on water is also reported to the European Environment Agency through the Eurowaternet information system. Although some of the information provided for the Eurowaternet stems from obligations arising from Community water legislation, Eurowaternet is extensively based on voluntary co-operation and provision of information from all involved parties.

## **2.6 Supporting research**

Research and technological development play an important role for the implementation of the Water Framework Directive. The 5<sup>th</sup> Framework Programme supports research in the field of water under the Key Action 1 "Sustainable management and quality of water" of the Environment and Sustainable Development thematic programme. The work programme for years 2001 and 2002 fully integrates the policy research needs in its priorities and provides support for the implementation of the Water Framework Directive. In particular high priority is given to the following fields of research:

- The development of methods for indication and assessment of the ecological status is a key issue for a successful implementation of the Water Framework Directive. The AQEM project will develop and test an assessment procedure for streams using benthic macroinvertebrates. The method developed will be tested in many parts of Europe and will, hence, be applicable for selected stream types in most ecoregions in Europe. It will be then combined with selected methods for stream assessment currently used in various EU member states. Additional projects will provide important results such as, for the ecological assessment of shallow lowland lakes (ECOFRAME project), for the understanding of functional aspects within rivers in relation to their loads and other impacts from the catchment (TARGET project), for the assessment and prediction of anthropogenic pressures and their impacts on sensitive freshwater systems to acidification and their potential of recovery (RECOVER-2010 project) etc.;
- River basin management and the development of a cost effective programme of measures with involvement of the public raises questions of process and methodology. Several projects like FIRMA, GOUVERNE, MULINO, MERIT, ADVISOR, EUWARENESS, SLIM, etc. will address those issues and they will develop integrated water management methodologies and tools for coherent policy and resource management decisions. They will also provide important insights and best practices for stakeholder participation, communication and socio-economic analysis.

In addition to those activities, the Water Key Action organised two major meetings with the co-ordinators of the ongoing projects with the objective to stimulate the exchange of information and consolidate research results through clustering of complementary projects. These meetings also provided a good opportunity to present the latest status of the implementation of the WFD to the co-ordinators. Moreover, the idea to stimulate the launch of a set of Concerted Actions for support to the WFD has been discussed. These Concerted Actions could be used as an instrument of co-ordination of research and could contribute directly to the various activities identified in this Strategic Document.

In the 6<sup>th</sup> Framework Programme (2002 to 2006) a continuity of the research for the implementation of the Water Framework Directive needs to be ensured.

## **2.7 Integration of water policy into other Community policies**

The Cardiff Summit in 1998 began a process aiming at a better integration of environmental objectives and sustainable development into central Community policy sectors which are the drivers behind economic development. The Council has developed conclusions on Agriculture, Transport, Energy, Internal Market and Development on the need for further integration, identifying the specific issues and areas where such integration should be improved or initiated. The Gothenburg Summit in June 2001 will attempt a synthesis of these initiatives with a view to identify a Strategy for further integration and means for ensuring sustainability in other Community policies.

In parallel with the activities under the Common Strategy for Implementation, DG Environment will pursue a further integration into other Community Policies of the specific requirements of the Water Framework Directive as well as the general

perspectives of Community water policy. Better co-ordination and knowledge of ongoing and planned activities and projects will be sought, including representation in specific meetings with Member States.

Priority areas of action are:

- Integration into **Regional Policy**, in particular the programmes for 2000-2006 and specific projects in relation to the short- and medium-term requirements and deadlines of the Water Framework Directive concerning the specific river basin district, such as:
  - Economic analysis of water use;
  - Analysis of natural characteristics of river basin (vulnerability, water availability etc.); and
  - Analysis of pressures (pollution sources, spatial use patterns, water demand) and impacts (water status).
- Integration into **Agricultural Policy**:
  - Introduce the requirements of the Water Framework Directive into specific projects, the rural development plans (e.g. agri-environmental measures), cross compliance, INTERREG guidelines and projects;
  - Ensure that the mid-term review of the Common Agricultural Policy (CAP) in 2003 and future CAP reforms or specific reforms of individual Common Market Organisations adequately take account of the requirements of the Water Framework Directive.
- Integration into **Fisheries Policy**:

The Commission's Communication (Com (2001) 143 final of 16.3.2001) on sustainable fisheries, "Elements of a Strategy for the integration of environmental protection requirements in the Common Fisheries Policy" is one example of such work;
- Integration into **Development Policy**:

The UN Conference Rio + 10, where water could become a major priority for Community Development Policy, combining environmental sustainability and development issues. This would be developed in close co-operation with Member States;
- Integration into **Marine Policy**:

Integration into the work of the Marine Conventions, and in particular the OSPAR, Helsinki and Barcelona Conventions needs to be established.

Integration into other policy sectors such as **Energy, Transportation and Internal Market**.

Continued co-operation within the Commission, particularly regarding shared responsibilities in relation to the UNECE/WHO protocol on water and health, and the Committee for Science, Toxicology, Eco-toxicology and Environment, advisory to the Commission, CSTEE.

### **3. ORGANISATION**

#### **3.1 Overall organisation of the implementation process<sup>3</sup>**

##### **3.1.1 Role of the Water Directors and the Commission:**

The Paris Water Directors' meeting emphasised the importance of keeping the common implementation process as a forum for informal co-operation. The organisational structure is not intended as a new formal forum for decision-making. Competence for the implementation resides exclusively with the individual Member State. The joint group of EU and Commission Water Directors should function as an important initiator and driver of the process but without attaining the character of a board with formal competence. Meetings of Water Directors will be co-chaired by the Presidency and the Commission. In this way the joint group of Water Directors will play a key role in the implementation process, steering the process and consolidating the results of the working groups.

Results from the process, e.g. in terms of guidance documents would have an informal and non-legally binding nature, creating a common working basis for the implementation. Any document will offer guidance to the Member States and in this way help in reaching a common understanding of specific questions arising in the implementation process. Without prejudice to the rights and obligations of the Member States and the European Commission the Water Directors may give suggestions on the follow up on a specific guidance document in particular, what guidance documents might form the basis for consideration by the Article 21 Committee. Such guidance documents will not prejudice the Committee procedure under Article 21.

A structure for the overall frame of the implementation process is presented in Annex IV.

##### **3.1.2 Strategic Co-ordination Group:**

A Strategic Co-ordination Group will be established for the co-ordination of the different working groups and activities under the Common Strategy such as the work in the pilot river basins. The Strategic Co-ordination Group will evaluate the outcome of the different working groups and prepare documents and reports for the Water Directors' meetings and give guidance to the key activities. Moreover, it is in charge to further develop the Strategic Document. The Strategic Co-ordination Group operates on the basis of the overall work programme presented in Annex III.

The Strategic Co-Ordination Group will be chaired by the Commission and formed by participants of all Member States<sup>4</sup>. Participants of Candidate Countries are allowed to participate as observers, NGO's and stakeholders may be invited as observers and/or consulted. The chairmen of the working groups of the key

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<sup>3</sup> This section focuses on new organisational requirements and does not deal with existing institutional arrangement, e.g. the Article 21 Committee of the WFD. For the competence of the Article Committee, see Annex V.

<sup>4</sup> Norway, represented by its Water Director, is associated with the activities of the EU Water Directors' meetings. The process is equally open to other EEA-countries.

activities should participate in meetings of the Strategic Co-ordination Group where relevant with a view to its agenda. The Strategic Co-ordination Group will be financially supported by the Commission.

### **3.1.3 Working groups on key activities and projects:**

Working groups will be created for the different activities and projects. All details concerning the objectives, mandates, expected outcome and timetable for each working group is specified in the information sheets in Annex II. The working groups will generally be chaired by a lead country or the Commission with participants from interested Member States, Candidate Countries, stakeholders and NGO's. Participants from stakeholders and NGO's should be invited when they can contribute to the work with a specific expertise.

The following working groups will be established in the first phase of the Implementation Strategy:

#### **Project 2.1**

Working group to develop guidance on the analysis of pressures and impacts

Lead: UK/Germany

#### **Project 2.2**

Working group to develop guidance on designation of heavily modified bodies of water

Lead: UK/Germany

#### **Project 2.3**

Working group to develop guidance on classification of inland surface water status and identification of reference conditions

Lead: Sweden

#### **Project 2.4**

Working group to develop guidance on the development of typology and classification systems of transitional and coastal waters

Lead: UK/Spain/EEA

#### **Project 2.5**

Working group to develop guidance for establishing the inter-calibration network and inter-calibration exercise

Lead: Commission (JRC/EI)

#### **Project 2.6**

Working group to develop guidance on economic analysis

Lead: France/Commission

#### **Project 2.7**

Working group to develop guidance on monitoring

Lead: Italy/EEA

### **Project 2.8**

Working group to develop guidance on tools for the assessment and classification of groundwater

Lead: Austria

### **Project 2.9**

Working group to develop guidance on best practices in river basin planning

Lead: Spain

### **Project 3.1**

Working group to develop a shared Geographical Information System

Lead: Commission (JRC/SAI)

The work of the different working groups is very strongly linked. For example the work of the economic working group is very strongly linked with the group on pressures and impacts and with the group on heavily modified water bodies. The overall co-ordination should be ensured by the Strategic Co-ordination Group based on the overall work programme presented in Annex III. Moreover the Strategic Co-ordination Group should co-ordinate the key activity 4 "Application, testing and validation" and thereby establish further links among the working groups. To avoid duplication of the work and to ensure the necessary exchange of information at the operational level other mechanisms of co-ordination should be established where needed. Each working group should, for example nominate representatives that participate in the other relevant working groups and are responsible for the necessary co-ordination. Further mechanisms could be considered.

## **3.2 Involvement of other European parties**

The involvement of European Economic Area-countries, the European Environment Agency and EUROSTAT is important for the success of the process. The strategic implementation process recognises the role of these other parties and encourages their involvement in the process in an open and transparent way. The involvement of the European Environment Agency and EUROSTAT is of particular importance in the working groups but should also be ensured on the co-ordination levels. The Strategic Document recognises the role of the European Environment Agency in developing the technical aspects of the Directive during the negotiation process and encourages its further association to the implementation process.

## **3.3 Involvement of stakeholders, NGO's and the civil society**

The Strategic Document recognises the importance of an active involvement of stakeholders, NGO's and the civil society. The strategic implementation process should be based on the principles of openness and transparency encouraging creative participation of interested parties. These parties may be involved both in the work of the Strategic Co-ordination Group (as observers) and as participants in the specific working groups and other activities under the Common Implementation Strategy. The involvement level should be decided on a case-by-case basis depending on scope and topic of the relevant process or working group. By identifying the kind of involvement needed for each situation of the implementation process, the Commission and Member States intend to ensure both the effective participation of and contribution from the interested parties and to enhance their understanding of the different elements related to the process. The basic idea is to promote an open



and clear exchange of views and concerns between all the parties directly responsible for the implementation of the Water Framework Directive and those who will be interested in, or affected by, it.

### **3.4 Involvement of Candidate Countries**

The importance of a common attitude towards Central and Eastern European Candidate Countries was recognised in relation to close co-operation on shared river basins and more generally in an informal way because these countries also have to implement the Water Framework Directive as part of the enlargement or approximation process.

Candidate Countries will be invited to participate in the Common Implementation Strategy. Meetings with Water Directors of the CEEC back to back with the Water Directors' meetings should be arranged regularly if possible with financial support from the Commission. Moreover, involvement of experts from the Candidate Countries in the different working groups and common activities should be promoted and determined on a case-by-case basis in relation to individual projects and activities.

The River Convention for the Danube, the Elbe and the Oder will play a key role in the implementation of the Directive in the transboundary river basins. They may be used as a platform for the co-ordination of the implementation activities. Contracting parties to these Conventions are Member States, Candidate Countries and the European Commission. The Conventions are therefore instruments for involving the Candidate Countries more closely in the implementation process.

## **4. FINANCIAL AND HUMAN RESOURCES IN SUPPORT OF THE COMMON IMPLEMENTATION STRATEGY**

Financial and human resources will be needed to make the Common Implementation Strategy operational. For each of the activities the necessary resources are described in the information sheets.

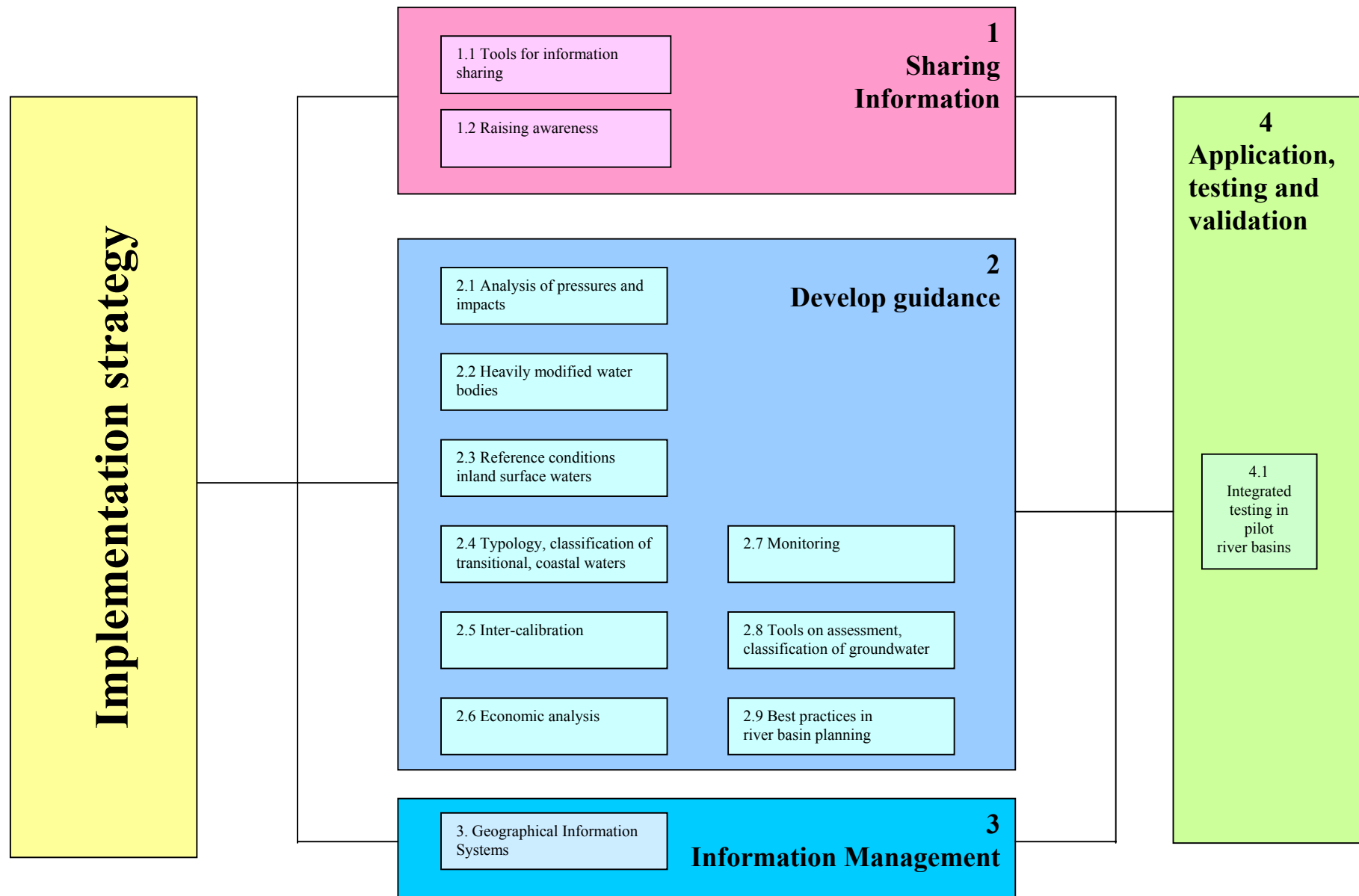
The European Commission will be able to finance the work of the Strategic Co-ordination Group including the participation of the Candidate Countries in this group. The Commission could also cover the involvement of Candidate Countries in some of the working groups. Moreover the Commission could support kick-off meetings of the working groups and some workshops.

The contribution of the Member States and the other leading parties is identified in the project sheets.



## **ANNEX I - OVERALL STRUCTURE OF THE IMPLEMENTATION STRATEGY**







## ANNEX II - INFORMATION SHEETS





## INFORMATION SHEET

### Key activity 1: Information sharing

#### Project 1.1: Tools for information sharing

- **General introduction:**

The implementation process of the Water Framework Directive will create a lot of information, experience and knowledge that needs to be managed. In order to be useful to all involved parties. The Implementation Strategy itself needs to establish appropriate tools for information management.

- **Objective:**

- Organise the process of information exchange between Member States, stakeholders and NGO's; and
- Organise the work of the working groups, in particular support the documentation and exchange of documents and information between the different expert groups.

- **Expected outcome:**

The two objectives of the project will have to be dealt within two different sub-projects which will produce the following outcome respectively:

- Web page on the Water Framework Directive with links to Member States, Stakeholders and NGO's; and
- Electronic interest group involving all participants in the working groups.

- **Lead country:**

The Commission is leading the two sub-projects.

- **Participants:**

No specific working group will be established but in creating the Web-page and the electronic interest group assistance and input is needed from all Member States and working groups.

- **Links with other activities:**

The project supports all other projects.

- **Financing:**

The projects will be financed by the Commission.

- **Timetable:**

- A first version of a new internet-page on the Water Framework Directive should be operational by April 2001 on the home page of the Commission;
- The electronic interest group is operational by beginning of May 2001 for the economic working group and then further developed when the working groups become operational.

- ***Project description:***

- **Internet web page**

- The internet web page of the Commission should be the entry to an internet- network of Member States, Stakeholders and NGO's on the Water Framework Directive. The web page should include the text of the Directive, general information material (e.g. the brochure), the approved products of the working groups, information about ongoing research, information about future events, other relevant information on the implementation process and an electronic discussion forum. Links to websites of Member States, NGO's stakeholders and research institutions should be provided.

- **Electronic interest group**

- The electronic interest group is aimed at supporting all experts involved in the Common Implementation Strategy. It will support the experts in exchanging information, in creating a documentation system and in organising the meetings. It will ensure cross-fertilisation and exchange of experiences/information between the different expert groups. The interest group has various components:

1. Background information - this section will include general information on the interest group itself, information on the Water Framework Directive and on the Common Implementation Strategy;
2. Library - this library stores various final/draft/working documents relevant to the different working groups of the Common Strategy;
3. Directory - this directory stores all the information details of the group Members;
4. Meetings - this component of the interest group provides the means to store information on forthcoming/past meetings;
5. Newsgroups - the newsgroup section has been structured in several newsgroups according to the activities developed under the Common Implementation Strategy. The newsgroup provides the means to discuss in an interactive manner among the group members specific issues and interests;
6. Email - this is a regular EMail service, that offers the advantage of having direct access to the EMail addresses of the interest group members. It also provides the means to send messages to the newsgroups or to specific categories of members; and
7. Help.

- The electronic interest group is based on a specific internet-software of the Commission. The Commission will therefore provide the necessary services. The working groups have to ensure that the information in their section will be kept up to date.

- ***Proposal for capacity building:***

- Not relevant.

## INFORMATION SHEET

### Key activity 1: Information sharing

#### Project 1.2: Raising awareness

- **Objective**
  - Inform the public about the Directive and the implementation process; and
  - Raising awareness in the water administrations of the Member States and the Candidate Countries.
- **Expected outcome:**
  - Information Strategy;
  - Brochure on the Water Framework Directive; and
  - A series of national and international workshops in the Member States and the Candidate Countries involving NGO's and stakeholders.
- **Lead country:**
  - The Commission will lead the preparation of the information Strategy and the production of the brochure; and
  - The respective Member State or Candidate Country will lead the workshop activity.
- **Participants:**

All Member States.
- **Links with other activities:**

The project is supporting all other projects.
- **Financing:**
  - The information Strategy and the brochure will be financed by the Commission; and
  - National workshops will be financed by the organising Member State. The Commission will ensure a financial contribution to the workshops of the Candidate countries.
- **Timetable:**
  - The information Strategy should be developed step by step. A first concept should be available by the end of May;
  - The brochure on the Water Framework Directive should be completed by the end of May 2001; and
  - Workshops on the Water Framework Directive should be organised in the year 2001/2002.
- **Project description:**

**Information Strategy**  
A Strategy for raising awareness should be developed. This Strategy needs to identify the objectives of the process, the target groups, the instruments and the activities of an awareness raising process. Moreover, the question of the dissemination of the results and outcomes of the Implementation Strategy needs to be addressed.

### **Brochure on the Water Framework Directive**

The brochure on the Water Framework Directive should be aimed at the information of the wider public. It should explain in a very simple language the basic principles of the Directive and the future steps on the implementation. The brochure will be produced in all Community languages and in the languages of the Candidate Countries.

### **Workshops**

The national and regional water administration and the regional and local stakeholders and NGO's need to be informed about the Water Framework Directive and about the consequences for the regional and local water management. In order to avoid inappropriate developments in water management and to prepare the public participation process, workshops on the Directive should be organised in the year 2001. The workshops should inform about the future requirements of the Directive and should reflect the present local and regional management practices in the light of these requirements. The outcome of the workshops should be conclusions on the next steps to implement the Water Framework Directive.

- ***Working methods:***  
The workshops should be organised mainly on a national basis involving regional and local water managers as well as regional and local stakeholders and NGO's.
- ***Proposal for capacity building:***  
Should be developed within the information Strategy.

## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.1 Guidance on the analysis of pressures and impacts

- **General introduction:**

There is relatively little guidance in Annex II of the Water Framework Directive (WFD) for conducting the analysis of pressures and impacts required by Article 5. The essential elements, based on Annex II, sections 1.4, 1.5, 2.3, 2.4. and 2.5, in relation to this analysis are presented below.
- **Objective:**
  - To develop a common understanding of the most effective approach to the identification of significant anthropogenic pressures on a river basin and the analysis of potential impact of these pressures, as required by Annex II of the Water Framework Directive;
  - To identify appropriate tools, models etc, which are available in Member States to carry out some, or all, of this analysis, and to identify where the development of new or updated tools is deemed important or necessary; and
  - To develop and disseminate guidance on the identification of pressures and impacts to interested parties in order to assist in capacity building with regard to this important aspect of the Water Framework Directive.
- **Expected Outcome:**
  - Collection of Information: Collation of information on current best practice in Member States and Accession countries in identifying significant anthropogenic pressures on river basins (both surface and groundwater components) and methodologies/tools used to assess the potential impact of these pressures;
  - Development of Guidance: Development of framework guidance for identification of anthropogenic pressures and assessment of their potential impact on water status and checklist of what should be covered;
  - Identification of Technical Tools: Identification of the “best currently available” tools (models, geographic information systems etc.), together with recommendations for further development existing / new tools;
  - Dissemination of Results: Results will be disseminated via a specific workshop (see timetable), the guidance document itself, and potentially a bespoke web-site; and
  - Capacity building: A key objective of the project will be capacity building. This will be achieved by several aspects of the project; the dissemination of guidance developed during the project, the opportunity for Member States to attend the project workshops and the development of a web-site which will be an ongoing resource for Member States.
- **Lead Country:**

The United Kingdom and Germany will be the lead countries for the project.

- **Participants:**  
All Member States, JRC and Eurostat.
- **Links with other activities:**  
Links have been identified and developed with the proposed projects on heavily modified water bodies (2.2), classification / reference conditions (2.3 & 2.4), inter calibration (2.5), and assessment & classification of groundwater (2.8). In addition the project has strong potential links to the projects on economic analysis (2.6), monitoring (2.7), and best practice in river basin management (2.9). These links will be developed early in the project timetable. Other potentially relevant projects GIS systems (3.1), and pilot testing in river basins (4.1). Also the project will draw on relevant tools and techniques being developed by Eurostat such as indicators and nutrient models. A further link will also be established through co-ordination with the ongoing activities relating to the revision of the Joint Eurostat-OECD questionnaire on inland water data collection.
- **Financing:**  
The UK will act as the secretariat for the project and will provide the venue for the project workshop and working group meetings. Participants in these events will be expected to pay their own travel and accommodation costs. The web-site could be hosted by the Environment Agency for England and Wales or by the Commission. If a separate, stand-alone web-site is agreed as necessary / appropriate then additional finances may be required.
- **Timetable:**
  - Start May / June 2001 – end December 2002;
  - May/June 2001: Technical "kick off" workshop led by UK/Germany;
  - June 1 2001: Questionnaire to Member States;
  - July 2001 – July 2002: Expert working group develop draft guidance (2/3 meetings);
  - September 2002: Workshop with Member States to consider proposed guidance;
  - October 2002 – December 2002: Final version of guidance produced.
- **Project description:**
  1. Identification of significant anthropogenic pressures  
For surface waters, estimation and/or identification of:
    - Significant point source and diffuse source pollution from urban, industrial, agricultural and other installations and activities;
    - Significant water abstraction for urban, industrial, agricultural and other uses, including seasonal variation and annual demand;
    - Significant loss of water in distribution systems for urban, industrial, agricultural and other uses;
    - The impact of significant water flow regulation, including water transfers and diversion, on overall flow characteristics and water balances;
    - Significant morphological alterations to water bodies;
    - Other significant anthropogenic impacts on the status of surface waters; and
    - Land use patterns, including identification of the main urban, industrial and agricultural areas and, where relevant, fisheries and forests.

All this requires an understanding of the practical implications of the definition of water status in order to judge what constitutes a "significant" source of pressure or morphological alteration as well as an impact.

For groundwaters, identification of the pressures to which the groundwater body or bodies are liable to be subject including:

- Diffuse sources of pollution;
- Point sources of pollution;
- Abstraction; and
- Artificial recharge.

2. Assessment of impact and the susceptibility of surface water status to the identified pressures

There is no detailed guidance for the purpose of the assessment of susceptibility and impacts. Guidance will be developed before the 2004-analysis work. In particular this assessment will require:

- An understanding of the practical implications of the definition of water status in order to judge that a specific body of water is susceptible to a particular source of pressure, including which parameters are indicative of a particular type of pressure;
- A good monitoring network to provide the necessary data and information on impact and susceptibility. However, there are no specific or detailed requirements for such a network at this time;
- Appropriate modelling techniques to be available where there is a wish to use these; and
- Further characterisation for bodies of water at risk of falling below good status, or likely to fall below good status without action, to optimise the design of programmes of measures and design of monitoring programmes.

3. Assessment of the degree to which groundwater bodies are at risk of failing to meet the objectives under Article 4

There is no detailed guidance on this assessment other than to indicate that the analysis may employ existing hydrological, geological, pedological, land use, discharge, abstraction and other data. For those bodies which have been identified as being at risk of failing to meet the Article 4 objectives, further characterisation is required, in order to establish a more precise assessment of the significance of such risk. This further characterisation includes information on the chemical composition of discharges to the groundwater body, and land use in the catchment or catchments from which the groundwater body receives its recharge, including pollutant inputs and anthropogenic alterations to the recharge characteristics such as rainwater and run-off diversion through land sealing, artificial recharge, damming or drainage.

- **Working methods:**

The sixth UK / German technical workshop on the topics related to the Water Framework Directive will be held in May / June 2001, in Northern Ireland. This will serve as a "kick off" meeting for the project. It will be attended by delegates from the UK, Germany and other interested Member States and European institutions. The workshop will focus on the identification of significant anthropogenic pressures as detailed in Annex II of the WFD. This will be achieved by presentations of current practice, focussing on diffuse pollution as an example, a site visit to assess the impact of these pressures in practice, and the development of a joint, agreed paper, scoping out the major considerations in identification of significant anthropogenic pressures and the analysis of their impact on water bodies.

Following the technical workshop, a questionnaire will be circulated to Member States to obtain further information on the techniques and tools currently used to identify

significant anthropogenic pressures on river basins and to identify the potential impact of these pressures. A working group of relevant experts from Member States will then use this information to develop and test the guidance, building on the output of the UK / German organised technical workshop. A further workshop will be held, approximately 18 months after the first, again to be attended by representatives of all interested Member States. This workshop will aim to finalise the guidance, agree the most appropriate tools/ models and identify where further development is required.



## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.2 Guidance on designation of heavily modified bodies of water

- **General introduction**

Criteria and definitions for designation of heavily modified bodies of water are found in Article 4, Annex II, point 1.1.v and in Annex V, table 1.2.5. Further guidance is needed for the practical implementation of these criteria and definitions.

A study has been initiated with financial support from UK and Germany in support of developing the necessary technical and scientific background for the drafting of such guidance. Building on the results of this study, guidance could be developed for practical application at the latest by summer 2002.

- **Objective**

The objective is to apply the provisions of the Water Framework Directive with regard to the identification of heavily modified bodies of water, and the establishment of reference conditions for those bodies. This will be done through a number of case studies representative of a range of impacts on the basis of which heavily modified bodies would be designated. These will be used to clarify the practicalities of application of the WFD to heavily modified bodies of water in terms both of how designation may be done practically and how the reference conditions for those bodies may be established.

- **Expected outcome**

Project 1: Member States Case Studies Project

The outcome will be a series of reports describing the practicalities of applying the heavily modified water body designation process and the definition of maximum and good ecological potential for between 10 and 25 case studies. The reports will cover the major impacts in respect of which the bodies of water may be designated:

Project 2: European Synthesis Project

An analysis of the case studies will be carried out to produce a synthesis, which identifies common approaches and describes the different options followed in the case studies. This project is dependant upon the provision of Commission funding:

- Synthesis of experience on the designation of bodies of water as heavily modified, clarifying the concept of significant adverse effect of mitigation measures on the uses in respect of which the bodies of water are designated;
- Synthesis of experience on determination of maximum ecological potential, clarifying what could be said to constitute all mitigation measures in these cases and those practicable measures which would be needed to attain the good ecological potential.

The results will be disseminated to and validated with experts responsible for the implementation of the WFD.

A web-site with access for all involved parties, including representatives of the Member States will be established for communicating and disseminating findings and results as

they develop in the project to allow for the active participation of all Member States.

Access to the web-site with information of best practices and other findings if the project is of relevance for the implementation of the Water Framework Directive will be established in close co-operation with the Commission to ensure wider dissemination of results of this project.

- **Lead countries**  
Germany and the United Kingdom share responsibility as lead on the project.
- **Participants**  
A, B, D, E, F, GR, NL, P, S, SF, UK
- **Links with other activities**  
This project will also feed into the Common Strategy for the Implementation of the Water Framework Directive as; “Key priority 2, 2.3 – Guidelines on Reference Conditions” and ; “Key priority 2, 2.4 – Guidelines on Economic Analysis”.
- **Financing**
  - Project 1: Member States Case Studies Project – financed by member states; and
  - Project 2: European Synthesis Project – it is hoped that funding may be available by Commission.
- **Timetable**
  - Duration of Member States’ Case Studies Project will be 14 months;
  - Work started in December 1999 and will be finalised in December 2001. European Synthesis Project is dependent upon funding by Commission. It is hoped that funding may be available to start in summer 2001. The two projects would then run parallel to allow the case-study steering group to manage the second project output. The final synthesis would be made available by 2002.
- **Project description**  
The WFD gives the possibility to Member States to identify heavily modified bodies of water on the basis of whether making changes to the artificial or modified characteristics of that body would affect:
  - The wider environment;
  - Navigation, including port facilities, or recreation;
  - Activities for the purpose of which water is stored, such as drinking water supply, power generation or irrigation;
  - Water regulation, flood protection, land drainage; or
  - Other equally important sustainable human development activities.

For the bodies of water so identified, the reference conditions on which the ecological assessment shall be based are those corresponding to the maximum ecological potential, which is defined as the state where the biological quality elements reflect, as far as possible, those associated with the closest comparable surface water body type, given the physical conditions, which result from the heavily modified characteristics of the body.

The procedural basis for the identification of reference conditions is Annex II, section 1.3, as for other bodies of surface water;

The main provisions are as follows:

- Reference conditions can be either spatially-based (an existing site corresponding to the above conditions) or based on modelling or using a combination of these;
- Reference conditions based on modelling can be derived using either predictive models or hindcasting methods, using historical, paleological and other available data; and
- Where it is not possible to establish reliable reference conditions due to high degrees of natural variability in the element, the element can be excluded from the assessment of ecological status.

A set of river basins will be chosen suitable to act as case studies for the application of the Water Framework Directive. The case studies will comprise at least six small, seven medium and three large river basins, shall be representative of the range of impacts in respect of which a body may be designated as heavily modified, and shall represent a reasonable geographic spread. Each case study will follow the procedure agreed by the project steering group and will focus on:

- Identification of the measures, which would be needed to attain good ecological status;
- Identification of the effect of each of the measures on the uses in respect of which the body would be designated as heavily modified (effect on the wider environment, effect on navigation, including port facilities, and recreation, etc.), including consideration of alternative methods for achieving the objectives, which are affected;
- Identification of which of the measures will have unacceptable effects on the uses concerned, therefore requiring designation of the body of water as heavily modified; and
- Determination of the measures constituting «all mitigation measures» for the purpose of establishing maximum ecological potential and those practicable mitigation measures required for the purpose of establishing good ecological potential.

- ***Working methods***

Workshops and evaluation of case studies.

- Two Workshops were held in Brussels in April and in October 2000. Several working papers were agreed at the meetings, which shall guide the project management and the case studies;
- These papers include a Strategy paper concerning the designation of heavily modified water bodies, a description of pressures and physical alterations, an assessment of the biological status of heavily modified water bodies, a paper on identifying a body of water and designating it as heavily modified and terms of reference for the case studies.

## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.3 Develop guidance on classification of inland surface water status and identification of reference conditions

- **General introduction**

The Water Framework Directive requires Member States to identify, for each type of body of water, reference conditions for the purpose of identifying a reference biological community in accordance with Annex II, section 1.3. The reference conditions must satisfy certain chemical and hydromorphological criteria set out in Annex V for each category of body of water, rivers, lakes, transitional waters and coastal waters.

This key activity aims at the development of a protocol for identification of reference conditions for inland surface waters<sub>z</sub> and for developing principles for identification of bodies of water corresponding to the boundaries between high, good and moderate status in lakes and watercourses.

- **Objective:**

The objective is to develop and validate a protocol for the identification of reference conditions and of the key class boundaries for the application of the classification regime for ecological quality in Annex V of the WFD. The study will focus on lakes and rivers.

- **Expected outcome:**

- Techniques validated for application across the Community will be identified and the conditions of their application outlined in the form of a protocol for the identification of reference conditions. Basic assumptions and other conditions will be documented;
- Access to a web-site with information on best practices on identification of reference conditions and other findings of relevance for the implementation of the WFD will be established in close co-operation with the Commission to ensure a wider dissemination of the results of the project; and
- Building on the results of the project, guidance for identification of reference conditions could be elaborated for practical application at the earliest by 2003, provided further financial support can be secured.

- **Lead country:**

Sweden is lead country and the project is co-ordinated by the Swedish Environmental Protection Agency and the Swedish University for Agricultural Sciences.

- **Participants:**

There are 15 partners participating in the project, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden and UK.

- **Links with other activities:**  
The co-ordinator will establish and maintain contact with the Commission and their inter-related projects included in "Common Strategy" (2.1, 2.2, 2.4, 2.7, 2.9) especially with the project group developing guidance on inter-calibration (2.5) where JRC/Environment Institute has the lead.
- **Financing:**  
The Commission provide a maximum amount of 131 000 to the lead country equivalent to 52,90% of the estimated eligible costs.
- **Timetable:**  
Duration will be 24 months. The project was initiated on 01 December 2000 and will be finalised 01 December 2002.
- **Project description:**  
The criteria and other guidance for identification of reference conditions and for classification of water bodies laid down in the Water Framework Directive imply broadly speaking, the following:
  - For hydromorphological parameters and the general physico-chemical parameters (listed in Annex V, section 1.1) that they reflect totally, or nearly totally, undisturbed conditions;
  - For specific synthetic pollutants that concentrations are 'close to zero' or at any rate below the limit of detection of the most advance analytical techniques in general use; and
  - For specific non-synthetic pollutants that concentrations remain within the range normally associated with background levels.

These elements provide the main technical basis for identification of reference conditions. The procedural basis for the identification is Annex II, section 1.3, the main provisions of which are as follows:

- Reference conditions can be either spatially-based (an existing site corresponding to the above conditions) or based on modelling or using a combination of these;
- Reference conditions based on modelling can be derived using either predictive models or hindcasting methods, using historical, paleological and other available data; and
- Where it is not possible to establish reliable reference conditions due to high degrees of natural variability in the element, the element can be excluded from the assessment of ecological status.

As regards classification and boundaries, Annex V, section 1.2 provides a definition of good status which, for biological elements, is based essentially on a slight departure from the reference biological population identified as above. For hydromorphological elements and general physico-chemical parameters, there are no separate criteria for good status, the condition being that the elements are such as to support a biological community of the requisite standard, and for specific synthetic and non-synthetic pollutants the condition is that waters comply with a quality standard for the relevant substance according to the procedure of Annex V, section 1.2.6. There are similar provisions for moderate status.

- **Working methods:**

The study will comprise the following steps:

(1) Elaboration of work programme and establishment of web-site;

A detailed work programme will be worked out, including the responsibility of different Member States to various programme activities. Common definitions should be agreed on where needed. It is particularly important to develop an operational definition of reference conditions and to agree on the historical period or other circumstances corresponding to reference conditions. A kick-off meeting workshop will be held to provide an opportunity for Member States to present their views on the work programme. The programme will be finalised after the workshop. A web-site will be established where project plans and results will be made available. The web-site will also provide a virtual forum for discussion and exchange of information. To be completed March 2001.

(2) Review of techniques for identification of reference conditions (spatially based or based on predictive models or hindcasting models) and principles for the identification of boundaries between quality classes;

Principles and techniques used in Member States and elsewhere will be reviewed. Each participating Member State is expected to report on their own procedures. Methods used elsewhere will be reviewed by partners who volunteer to do so or as arranged by the leader. The results will be reported and discussed at a workshop, where further analyses and selection of principles and methods to be included in a final protocol will also be discussed. To be completed June 2001 (workshop May).

(3) Evaluation of techniques used for identification of reference conditions and principles for delineation of quality classes;

Based on the results reported in the previous stage of the project, a comparison and evaluation of techniques and principles will be made, taking into account ecological realism, environmental relevance, need for supporting data, robustness and precision. The possibilities and limitations of different procedures will be highlighted. The evaluation is expected to be made by selected Member States, on a voluntary basis and with tasks distributed among participants according to expertise and interest. The results will be reported and discussed at a workshop, where the outline of a common protocol for the assessment of reference conditions will also be discussed. To be completed in December 2001 (workshop November).

(4) Elaboration of first protocol draft;

Based on the findings in the previous stage, a first draft outlining a common procedure for identification of reference conditions and for identification of boundaries between high, good and moderate status will be produced and submitted to Member States for comments. The draft will be produced by the leader. To be completed in May 2002.

(5) Review and validation of protocol;

The draft will be reviewed and commented on by Member States. The protocol will also be applied and evaluated in a number of case studies in different Member States. All Member States are expected to review and comment on the protocol, and those who want may perform one or several case studies. The results will be reported at a workshop, where modification of the draft that might be necessary will be discussed and the final protocol outlined. To be completed in October 2002 (workshop September).

(6) Finalisation of protocol and termination of project;

Based on the findings in the previous step the protocol will be revised and a final report to the Commission will be written. To be completed in December 2002.

## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.4 Guidance on the development of typology and classifications systems of transitional and coastal waters

- **General introduction**

The Water Framework Directive requires Member States to identify, for each type of body of water, reference conditions for the purpose of identifying a reference biological community in accordance with Annex II, section 1.3. The reference conditions must satisfy certain chemical and hydromorphological criteria set out in Annex V for each category of body of water, rivers, lakes, transitional waters and coastal waters.

This key activity aims at the development of a protocol for identification of reference conditions for transitional and coastal waters, and for identification of bodies of water corresponding to the boundaries between high, good and moderate status in transitional and coastal waters.

- **Objective:**

The project is intended to develop guidance on typology and classification for coastal and transitional waters. The aim is to identify existing classification and typology tools, which represent best practice and which could be further developed to support Water Framework Directive implementation.

- **Expected outcome:**

The EU-project would consist of four components:

- A review of existing typology systems leading to the development of a framework for the development of European typology systems;
- Consideration of existing methods which could assist in the definition of reference conditions;
- A review of existing classification schemes and the identification of a series of existing tools; and
- The provision of guidance on the development of typology and classification schemes and how they interact.

It is anticipated that this project will link the EcoRegion working groups, which were created at the conference (covering the Mediterranean, Baltic and Atlantic). These groups will develop detailed projects, which will provide appropriate methodologies for these regions.

- **Lead country:**

UK and Spain are lead countries. The European Environment Agency, Sweden and Germany are considering joining as co-leaders.

- **Participants:**

All Member States, except Austria, Luxembourg, Norway and the JRC.



- **Links with other activities:**

The project would link to the project on the definition of reference conditions for inland surface waters (2.3). The problems faced in method development in freshwaters and coastal/transitional waters are very different but it is considered that close collaboration between the two projects will ensure that the projects will benefit from the research outcomes. Both projects can then contribute to the development of project on inter-calibration exercise in both inland surface waters and coastal/transitional waters (2.5). Links will also exist between this project and the projects on analysis of pressures and impacts (2.1), heavily modified water bodies (2.2), monitoring (2.7), and best practice in river basin management (2.9).

- **Financing:**

A project proposal (TrACTAC) requesting 800,000EUR from the Fifth Framework Programme was submitted in February 2001. One of the outputs from this proposal will be the Common Strategy guidance on the development of typology and classification systems for transitional and coastal waters. *The later stages of the project will develop standard methods for input to CEN.*

Two other research proposals were also submitted to the Fifth Framework Programme in February 2001 to fund research to develop typology and classification systems for transitional and coastal waters in the Baltic (CHARM) and the Mediterranean (ECOTYPES) eco-regions. The TrACTAC project will also support a cluster of such research projects to enable experiences to be exchanged and common approaches to be taken.

- **Timetable:**

Guidance on classification typology methodologies must be available for Member States by June 2002. The proposed project aims to deliver relatively simple outputs and it is considered practical to deliver these by June 2002, provided early confirmation is received of Fifth Framework Programme Funding.

- **Project description:**

**Typology**

The Water Framework Directive requires member states to develop a system for dividing surface waters into units, which had (prior to human impacts) similar hydro-morphology and physico-chemistry. These units form the basis upon which a classification system is built. These units also represent the units between which the Commission will carry out an inter-calibration exercise, which will compare the classification boundaries set by member states.

The Directive proposes two typology options:

- "System A" which would have 15 classes; and
- "System B" which is more flexible and would allow Member states to define the appropriate level of differentiation.

The high-level divisions in a typology system are most effectively defined on continental scale (temperature, salinity and tidal range). The project would develop a framework within which Member States or Regional groupings could design an appropriate typology system.

### **Classification scheme**

The WFD requires member states to identify reference conditions for the units identified by the typology system. The classification system must measure change from these reference conditions. In coastal waters, the classification scheme must include consideration of phytoplankton, other aquatic flora (seaweeds and flowering plants) and benthic invertebrates. For transitional waters it must also include fish.

A limited number of coastal classification schemes exist in Europe (Scotland/Northern Ireland, Sweden, Norway & Finland). These schemes have different strengths and weaknesses. For example, eutrophication is not included within the Scottish/Northern Irish system but is the main consideration under the Swedish and Finnish systems. In contrast, invertebrates play a major role in Norway and Scotland/Northern Ireland but do not represent a major component of the Swedish system. In addition to operational schemes, a number of countries are developing classification schemes (France, Italy and Spain).

The intention of the project would be to identify classification tools which represented best practice and which can use the output from existing sampling programmes arising from national, Community and OSPAR/HELCOM/Barcelona Conventions. Similarly, the project would consider options for classification structure (how to combine components into a single score) as well as statistical and quality standards.

### **Development of guidance**

There have been difficulties in interpreting the requirements of the Directive in relation to the development of typology systems and their interaction with classification schemes. It is considered that simple guidance can be developed from the experience gained from analysis of current typology and classification schemes. This guidance would be specific to transitional and coastal waters.

- ***Working methods:***

The guidance will be produced by consulting with national groups of experts and end users from Member States with a coastline about existing systems for typology and classification of transitional and coastal waters. The findings from these national groups will then be brought to the TrACTAC Thematic Network which will involve recognised EU experts in the typology and classification of transitional and coastal waters to identify the strengths and weaknesses of different approaches. The Thematic Network will be responsible for leading workshops and consultations to develop a framework within which Member States or regional groupings could design appropriate typology systems for their circumstances and to identify best practice in classification tools for transitional and coastal waters. The results from these consultations will provide the Thematic Network with the information necessary to produce simple guidance on the development of typology systems and their interaction with classification schemes in transitional and coastal waters.

The overall approach suggested by the TrACTAC proposal is bottom-up with experts from Member States and eco-regions feeding information to the Thematic Network. The Thematic Network will ensure, through regular meetings over the lifetime of the project, that end users are fully engaged in developing the project outputs and therefore in using them to implement the Water Framework Directive in a co-ordinated manner across the EU.

## INFORMATION SHEET

### Key activity 2. Develop guidance on technical issues

#### Project 2.5 Guidance for establishing the inter-calibration network and inter-calibration exercise

- **General introduction**

The inter-calibration of the ecological quality classification (i.e. the scale of the ecological quality ratio, EQR) needs to be developed. In Annex 5, section 1.4.1 of the WFD, it is stated that an inter-calibration exercise shall be carried out in early 2006 to ensure the comparability of the biological monitoring results, expressed as EQR's, of the different Member States. Prior to this (by the end of 2004) establishment of an inter-calibration network is required. Final endorsement of the inter-calibration network and the results of the inter-calibration exercise fall within the competence of the Article 21 Committee.

The Commission is responsible for facilitating the inter-calibration exercise through ensuring exchange of information between Member States, establishing a register of inter-calibration sites (inter-calibration network), and publishing results of the inter-calibration exercise. Ultimately, inter-calibration of biological monitoring methods and ecological quality ratios should be carried out on a continuous and regular basis, thus leading to establishment of a European Centre for inter-calibration of surface water ecological quality assessment systems. In order to initiate this a working group on inter-calibration will be established, consisting of representatives of all Member States and of the Commission.

- **Objective:**

The objectives of the working group are:

- 1) to provide a scientific and technical basis for the establishment of the inter-calibration network;
- 2) selection of the inter-calibration sites;
- 3) to assess the comparability of the Ecological Quality Ratio (EQR) class boundaries based on the monitoring and classification systems of the different Member States; and
- 4) to facilitate information exchange between the Member States.

- **Expected outcome:**

- Report describing the scientific and technical basis for the inter-calibration network (2002);
- Register of the inter-calibration network (2004);
- Report on the comparability of the ecological quality class boundaries in EU. Suggestions for adjustment coefficients for harmonisation of the classification systems of different Member States with respect to sensitivity of different ecotypes (2006);
- Web-site showing the criteria for selection of the inter-calibration sites, their location, and the results of the inter-calibration exercise will be established and maintained by the Commission.

- **Lead :**  
The EC-Joint Research Centre/Environment Institute has the lead.
- **Participants:**  
All Member States will participate. Participation of EEA and the Candidate Countries is also anticipated.
- **Links with other activities:**  
The establishment of the inter-calibration network requires that reference conditions and ecological quality classification are already drafted by the Member States (for each ecoregion and all surface water types within ecoregions). As the timetable for both activities is similar (draft reference conditions and draft register for inter-calibration sites should be completed by 2003), it is necessary to ensure a continuous exchange of information between this working group and the groups developing guidance on classification of surface water status and identification of reference conditions (Projects 2.3 and 2.4). Information exchange is also needed with the working group developing guidance on the analysis of pressures and impacts (Project 2.1). The sensitivity of biological quality elements for different anthropogenic pressures is varied, which has an effect on the comparability of classifications based on different quality elements.

The completion of the inter-calibration exercise requires that monitoring protocols are established. Moreover, monitoring design is crucial for the reliability and comparability of the ecological quality classification and inter-calibration thereafter. Thus information with the group developing guidance on monitoring (Project 2.7) is also required. Another working group (Project 2.2) is compiling guidance on designation of heavily modified bodies of water. Information exchange is needed also for the incorporation of the heavily modified waters into the inter-calibration network.

Involvement of Eastern European Candidate Countries is also anticipated, for instance by including selected sites from those countries in the inter-calibration network or by voluntary participation in the inter-calibration exercise. The European Environment Agency (EEA) can facilitate their involvement, since these countries will become members of the EEA by the end of 2001.

Links should also be established to ensure exchange of information between this working group and relevant EC 5<sup>th</sup> FP RTD-actions and national RTD-programs.

- **Financing:**  
Not completed yet.
- **Timetable:**  
A kick-off workshop will be held 7-8 June, 2001, at the Joint Research Centre, Ispra, Italy, where a detailed work programme including timetable will be elaborated.
- **Project description:**  
The purpose of the inter-calibration exercise is to ensure comparability of the ecological quality class boundaries and to obtain common understanding of ecological status of the surface waters all over EU (i.e. good ecological quality should have the same ecological meaning all over EU). More specifically, a comparable definition of the boundary between good and moderate quality is needed. This is particularly important in order to have an equal level of ambition in achieving 'good status' of surface waters in different

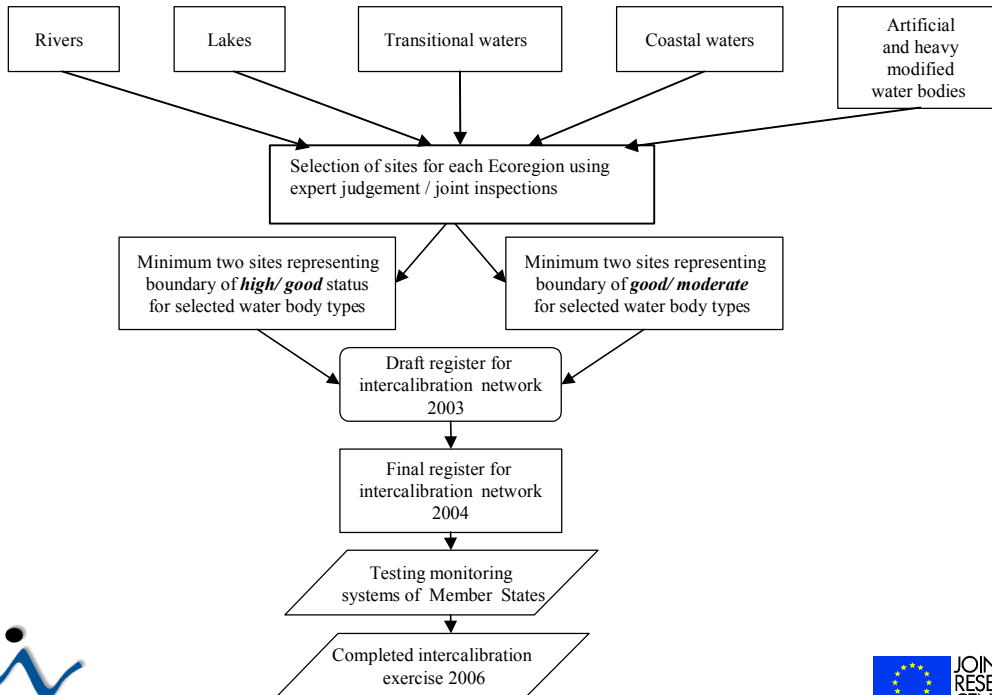
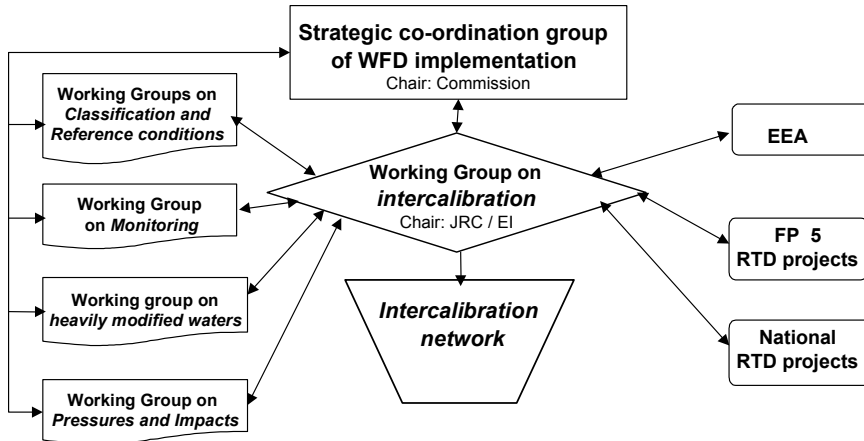
Member States. An inter-calibration network is needed in order to achieve a common understanding of the normative definitions of surface water status (defined in Annex V, section 1.2) in relation to reference conditions. Also the comparability of surface water quality measured by different biotic quality elements and differences in sensitivity to different anthropogenic pressures need to be evaluated.

- **Working methods:**

Based on the definitions and provisions mentioned above, the working group should carry out the following tasks:

- Definition of the scientific and technical specifications needed for the establishment of the inter-calibration network (years 2001-2);
- A detailed work programme will be produced at the start of the working group. A plan to carry out preparatory projects and to ensure the establishment of the required infrastructure for information exchange (meetings and workshops, website) will be elaborated;
- Identification of sites for the inter-calibration network through expert judgement and joint inspections (years 2003-4);
- Inter-calibration sites are identified for each ecoregion and for selected surface water types. For each type of water body selected, a minimum two sites corresponding to the boundary between the normative definitions of high and good status are included. Similarly, for each type of water body selected, minimum two additional sites corresponding to the boundary between the normative definitions of good and moderate status are included;
- Completion of the draft register for inter-calibration network (by 2003);
- After adaptation of the final inter-calibration register by the Article 21 Committee (by 2004) the inter-calibration exercise will be performed. The monitoring system of each Member State shall be applied in selected inter-calibration sites which are both in an ecoregion and similar to a surface water body type present in that Member State (year 2005-6);
- Results of the inter-calibration exercise and values established for the Member State monitoring system classifications published by the Commission (by 2006); and
- Information exchange between the different Member States and working groups is ensured throughout the process through joint meetings, workshops, and web-sites.

## Working Group on Intercalibration: Links with other activities



## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.6 Develop guidance on economic analysis

- **General Introduction**

The Water Framework Directive clearly integrates economics and economic thinking into future water policies. It does so through two specific articles:

1. The **economic analysis of water uses** to identify the most cost-effective set of measures for achieving the environmental objectives of the Directive (Article 5 and Annex III); and
2. The use of **prices and charges for enhancing the sustainability of water resources** (Article 9).

Moreover, economic issues are seen as key to the use of derogation and the definition of heavily modified water bodies. At present, however, the Directive provides little guidance on the objectives and type of economic analysis required for analysing water uses and for developing river basin management plans.

- **Objective:**

The **short term (2000-2002) objective** of this activity is to develop:

1. A non-legally binding **practical and usable guidance document** for the economic analysis as required for the implementation of the Water Framework Directive;
2. In a **collaborative and transparent** manner; and
3. With involvement of experts and stakeholders from the **European Union Member States, the Commission and Central and Eastern European countries.**

Because of the short deadline, the approach will build on existing information, approaches and practices and will be very pragmatic and practical. However, as more information is collected and new methodologies developed/made operational, the guidelines will be updated after 2004 to ensure the best economic information is available for developing the river basin management plans.

- **Expected outcome:**

The main outcome of this activity is a guidance document for undertaking the economic analysis as requested under the Water Framework Directive.

A by-product of this activity will be the dissemination of the role economics can play in water policies and planning to a wide range of stakeholders and water experts through the different workshops, discussions and testing of the draft guidance document. Specific training and capacity building activities are foreseen as a follow-up of the activities presented in this sheet.

- **Lead country:**  
France (Ministère de l'Aménagement du Territoire et de l'Environnement, Agences de l'Eau) and the European Commission share the responsibility as lead/secretariat on this activity.
  
- **Participants:**  
The participants in the activities of the working group include:
  - Experts from all EU Member States and selected experts from Central and Eastern Europe, as permanent members of the working group;
  - Stakeholders and other experts from EU Member States and Central and Eastern Europe for specific input and contribution in the activities of the working group, and for participation in specific workshops, conferences, etc; and
  - Stakeholders and experts from pilot river basins, for involvement in the testing of draft guidance documents.
  
- **Links with other activities:**  
Specific links will be required between this project and activities linked to:
  - **Heavily modified water bodies (project 2.2):** the definition of heavily modified water bodies clearly refers to economics. The activities of the two groups need to be co-ordinated to ensure coherence (e.g. in definitions of key economic variables) and limit duplication;
  - **Impact and pressures (project 2.1):** strong links have to be developed with the "impact and pressures" group to ensure that the different elements of the analysis requested under Article 5 are coherent. Specific issues include the joint definition of sub-systems of common interest for which key variables are defined and computed, the combination of biophysical and economic information in common/coherent databases, the final organisation of the report to be developed for Article 5, etc.; and
  - **Best practices in river basin planning (project 2.9):** Overall, the integration of economics with other activities and analyses will be key to ensuring economics play their due role in the identification of cost-effective measures for achieving the environmental objectives of the Directive.
  
- **Financing:**  
Financing will be provided mainly by France and the European Commission as far as the following items are concerned: organisation of meetings, organisation of workshops and conferences, participation of experts from Central and Eastern Europe to meetings and workshops, input from consultants. Germany will also contribute to the activities of the group via financial support to consultants.  
  
Activities undertaken in the context of testing in pilot river basins will be financed by the countries sharing the river basins considered. Technical assistance to testing will also be provided in all pilot river basins by consultants through financial support from the Commission.
  
- **Timetable:**  
As the economic analysis of water uses will be finalised for all river basins by 2004, the guidance document will need to be ready for use by the first semester of 2002. More specifically, key dates in the development of this guidance document (tentatively) include:
  - From December 2000 to July 2001 - development of the draft guidance document;



- May 2001 - workshops with stakeholders, with experts from Central and Eastern Europe (to present, discuss, ensure input);
- September 2001 - start of the testing of draft guidance document in pilot river basins;
- January 2002 - workshops/conference with stakeholders, with experts from EU Member States and Central and Eastern Europe for sharing and discussing testing experience with stakeholders/experts, identifying modifications to the draft guidance document;
- From January 2002 to March 2002 - modification of the draft guidance document; and
- April 2002 - final guidance document, ready for training/capacity building then use.

- **Project description:**

The following series of activities is proposed for the development of a guidance document on the economic elements of the Water Framework Directive.

- **Review of existing experiences (research, policy making)** in Member States of the European Union and Central and Eastern European countries;
- Based on these experiences, **development of draft guidelines** combining both "*minimum requirements*" and "*best practices*";
- Real-life **testing** of the draft guidelines in selected river basins. The choice of river basins will depend on how representative these basins are from a socio-economic and hydrological point of view, on the availability of information and studies, and on the willingness of Member States/stakeholders to undertake the testing;
- Based on the testing, the guidelines will be **modified and refined**;
- These guidelines will then be **validated by a wide range of stakeholders** through workshops/conference and finalised; and
- Final agreement on the guidelines.

**Training** may then be proposed for experts from Member States and Central and Eastern Europe on the use of the guidelines.

- **Working methods:**

- The working group will be involved in the definition of the final product/guidance document (target group, content, format). It will review experiences in economic analyses applied to water resources/water policies and undertake the "virtual testing" activities. It will monitor and review activities (including testing) for the development of the guidance document;
- Draft document will be prepared by the secretariat of the working group for discussions through electronic means (development of a specific section focused on economic issues in the Water Framework Directive internet-based discussion forum) or through meetings;
- Inputs for the development of the guidance documents will come from consultants and from a wide range of experts and stakeholders through the electronic forum that will be established, and through regular consultation/discussions in workshops, conferences, and the testing of the guidance documents in pilot river basins; and
- Regular links with, input from and input to other activities developed under the Common Strategy will be required to ensure economics are adequately integrated in the development of river basin management plans.

## INFORMATION SHEET

### Key activity 2: Develop guidance on technical issues

#### Project 2.7 Develop guidance on monitoring

- **General introduction**

- Identification and designation of River Basins and River Basin Districts (2003), the inventory of water bodies according to their type and the assessment of chemical and ecological status, the analysis of pressures and impacts on water bodies (2004), represent main operational requests fixed by the WFD as a basis to define programmes of measures to achieve the environmental objectives;
- Surveillance, operational and investigative monitoring programmes for surface waters and groundwater in order to establish a coherent and comprehensive overview of ecological, chemical and quantitative (groundwater) status and ecological potential within river basins or river basin districts are requested (Article 8) at the latest six years after the enforcement of the WFD (2006). General criteria and requirements for monitoring are presented in Annex V, section 1.3 and 2;
- A water monitoring network shall be designed and operated to provide information on impacts and status of water bodies and assess any change resulting from programmes of measures undertaken in River Basin Management Plan;
- Each Member State will develop these tasks moving from a different starting point which will reflect the :
  - Specific territorial complexity;
  - Difference in previous monitoring and control practices ( monitored water bodies, mix of water body types, network extension and site density, methods, metrics, monitored parameters, indexes, sampling frequencies, etc.);
  - Existence and information content of point and diffuse pressure sources inventories;
  - Knowledge of the sustainable availability and distribution of waters and their natural connections (in particular for groundwater); and
  - Availability and functionality of tools for analysis: models, cartography, GIS, Information Systems.
- The WFD implementation will require comparability of data and information but at present only general criteria on methods and procedures have been defined;
- During the continuous work for preparation and implementation of the Water Framework Directive, questions on analysis and monitoring of toxic substances will emerge in relation to all work items, e.g. monitoring data and quality for the review of the priority list, analysis and monitoring of quality standards, monitoring of the provisions and objectives for priority hazardous substances and providing guidance. In addition, there is a need to follow developments and new analytical approaches, which may be useful for the implementation of the Water Framework Directive, in particular in relation to Article 16.

- **Objective:**

The general objective will be to provide technical information and tools useful to support and help the surveillance, operational and investigative monitoring work of the River Basins and River Basin Districts competent authority as identified by Member States, to

implement requirements, rules and objectives of the WFD. Operational monitoring will be considered as a priority.

Specific objectives will be to:

- Develop a common approach for the monitoring of the water status in the river basins in order to provide a coherent basis for the assessment of their chemical and ecological quality;
- Share the concept of a significant, cost-effective and representative monitoring for surface water bodies according to the category and type: network structure and methods to integrate different classes of data;
- Ensure coherent implementation and a sufficient (minimal) comparability of results and information allowing to derive the river basin management plans including an efficient programme of measures and assess compliance;
- Support sharing of information fluxes;
- Support the Commission and the EAF on priority substances and pollution control in questions of analysis and monitoring of pollutants for the purpose of preparing and implementing measures provided for in Article 16 of the Water Framework Directive 2000/60/EC;
- Co-ordinate activities on analysis and monitoring of aquatic pollutants on European and international level and to provide a forum for discussion of new analytical and monitoring approaches on European level.

- ***Expected outcome:***

1. *State of the art of monitoring in Member States*

Recognition of the monitoring organisation and network in each Member State and comparison with similar information in selected Accession Countries will represent the real starting point to further development.

Information will reflect the present condition for any of the main points as mentioned in the general approach section.

2. *Informal guidance documents*

Informal guidance documents will be developed for:

- Design of a monitoring network. Criteria for the identification of significant water bodies of the basin or basin district; selection of monitoring sites in relation to pressures, impacts, and the presence of protected areas; network representation in a GIS; integration of national existing networks and integration of national network at European level;
- Monitoring procedures/protocols in accordance to Annex V of WFD for rivers, lakes, transitional waters, coastal water, artificial and heavily modified water bodies and groundwater;
- Criteria for the assessment of water quality status for each water body type: chemical status, ecological status, ecological potential and quantitative status; and
- Monitoring data management: data quality, inter-calibration exercises, data representation, data transmission.

- **Lead Country:**  
Italy and the EEA.  
(Italy will be supported by: Italian Ministry of the Environment: Technical Commission, ANPA: National Environmental Protection Agency, CTN-AIM: Italian National Topic Centre on Inland waters and Coastal Waters, ARPA/APPa: Regional Environmental Protection Agencies ISS: National Institute of Health, CNR-IRSA: Research National Council, The Water Research Institute, ICRAM: Central Institute for Sea Research)
- **Participants**  
All Member States except Austria, Ireland, Luxembourg and the JRC.
- **Links with other activities:**  
The project will need a direct and effective link with several activities undertaken in the frame of the Common Strategy.

Major links will be with:

- Project 2.1 : guidance on the analysis of pressures and impacts;
- Project 2.2 : guidance on designation of heavily modified bodies of water;
- Project 2.3 : guidance on classification of inland surface water status and identification of reference conditions;
- Project 2.4 : guidance on the development of typology and classification systems of transitional and coastal waters;
- Project 2.5 : guidance for establishing the inter-calibration network and inter-calibration exercise; and
- Project 2.8 : guidance on tools on assessment and classification of groundwater.
- **Financing:**
- **Timetable:**

	2001	2002	2003	2004	2005	2006
<b>I. Program and organisation</b>	x					
<b>II. Monitoring guidance for inland surface waters</b>	x	x	x			
<b>III. Monitoring guidance for transitional and coastal waters</b>	x	x	x			
<b>IV. Monitoring guidance for groundwater</b>	x	x	x	x		
<b>V. Monitoring data</b>			x	x	x	
<b>VI. Dissemination of results</b>			x	x	x	x

- **Project description**
  - Annex V, section 1.3 and 2 of WFD define general criteria for monitoring of the ecological and chemical status for surface waters and the quantitative and chemical status of groundwaters. Criteria include design of surveillance, operational and investigative monitoring and additional requirements for protected areas. Moreover, standardised methods for sampling and data evaluation and methods for classification and presentation of water status;
  - Analysis of these requirements and comparison with actual state of the art in Member State will provide a true practical basis to develop useful guidance and technical tools to fulfil WFD monitoring requirements for all different categories of water bodies according the best available knowledge;

- Results of relevant linked projects of the Common Strategy will be integrated in the monitoring project. The project would be also identify and take full into account the output from existing relevant programmes arising from national or community legislation and international Conventions.

- *Working method*

The working hypothesis is made that Member States are reconsidering their monitoring networks and procedures to update and improve their monitoring organisation to fulfil WFD requirements based on cost benefit aspects. *Minimum condition* to comply with the data and information requirements of the directive needs to be identified.

Main tasks will be:

*Work package 1.- Program organisation*

- Definition of work packages and a work programme;
- Creation of small groups for the different work packages with participants of Member States and of Candidate Countries wishing to participate.

*Work package 2.- Definition of the state of the art of monitoring in MS*

- Evaluation of existing documents and comparison of the existing practices in Member States for monitoring of all relevant categories of water bodies;
- Analysis of the results, methods and protocols from MS and Candidate Countries;
- Definition of the scope and approach to guidance for monitoring;
- Report on the state of the art of monitoring in EU.

*Work package 3.- Guidance for monitoring of inland surface waters*

- Criteria for the design cost effective monitoring networks for rivers, lakes and heavily modified water bodies;
- Definition of monitoring programmes, protocols and procedures;
- Analysis and monitoring of priority substances;
- Criteria for classification and representation of results.

*Work package 4. Guidance for monitoring of transitional and coastal waters*

- Criteria for the design of cost effective monitoring networks;
- Definition of monitoring programmes, protocols and procedures;
- Analysis and monitoring of priority substances;
- Criteria for classification and representation of results.

*Work package 5. Guidance for monitoring of groundwaters*

- Criteria for the design of cost effective monitoring networks for groundwater bodies;
- Definition of monitoring programmes, protocols and procedures;
- Analysis and monitoring of priority substances;
- Criteria for classification of the quantitative and chemical status and representation of results.

*Work package 6. Analysis and monitoring of priority substances*

For the analysis and monitoring of chemical pollutants it might be necessary to establish a sub-group. This group will be lead by JRC-EI and co-ordinated within the working group on monitoring. The group will deal with analysis and monitoring of the substances mentioned in Annex VIII, no. 1-9 of the Water Framework Directive. An appropriate working program will be set-up and identified tasks will be carried out in close collaboration with other Commission services and external scientific experts.

*Work package 7. Monitoring data*

*Work package 8. Dissemination of results*

- **Outcome**

First events will refer to work package 1:

1. First expert meeting in Rome mid June 2001:
  - Detailed organisation of the Project Plan;
  - Organisation of working groups on work-packages;
  - Timetable of events.
2. Seminar in September/October:  
Monitoring practices and organisation in Member States with the aim of preparing a draft report on the state of the art of "Monitoring programmes in Member States".

## INFORMATION SHEET

### Kay activity 2. Develop guidance on technical issues

#### Project 2.8 Guidance on tools for the assessment and classification of groundwater

- **General introduction**

- The Water Framework Directive requires member states to achieve good status for groundwater and to implement the measures necessary to reverse any significant and sustained upward trend according to the provisions of article 4. Good status is defined in more detail in annexe V item 2.1.2 and 2.3.2;
- According to annex V 2.4.4 Member states have to use data from both surveillance and operational monitoring in the identification of long term anthropogenically induced upward trends in pollution concentrations and the reversal of such trends. The base year of the period from which trend identification is to be calculated shall be identified;
- According to annex V 2.4.5 the results of individual monitoring points shall be aggregated for the groundwater body as a whole for assessing status;
- The mean value of the results of monitoring at each site shall be calculated and in accordance with Art. 17, these mean values shall be used to demonstrate compliance with good status.

So far the directive **does not provide** precise technical specifications and mathematical algorithms for:

- Calculating trends and trend reversals;
- Data aggregation of monitoring data for each groundwater body or group of groundwater bodies;
- Criteria for assessing good ground water status, as in the final phase of negotiations no final agreement was reached with regard to the criteria for assessing good status.

- **Objective:**

The terms of reference of this project were developed on when precise criteria for assessing good groundwater status were still included in the text of the Water Framework Directive.

The main objectives of this project are therefore the development of:

- An appropriate aggregation method for the calculation of a representative mean value of the groundwater body;
- An appropriate statistical method for trend assessment and trend reversal which includes the determination of the minimum requirements for calculation and the base year taken as a starting point for trend assessment.

This will be worked out with special consideration of concentrations below the detection limit and of concentrations that are distributed unevenly within the groundwater body. The project concentrates on developing appropriate algorithms on a scientific basis. Various types of data aggregation and calculation of trends will be discussed and presented within this project. The developed algorithms will be independent from quality objectives.

Neither the development of criteria for assessing good status nor its political discussion is part of this project.

- **Expected outcome:**
  - Algorithm for data aggregation at the groundwater body level as basis for the assessment of groundwater chemical status;
  - Algorithm which can be implemented and applied for the assessment of trends and for trend reversal assessment;
  - Minimum requirements on data (number of sampling sites, data quality. etc.);
  - Recommendation for the base year or period from which trend identification is to be calculated;
  - Web-site for disseminating results;
  - Summary of current practice in Member States on data aggregation and the calculation of trends, monitoring strategies and network design;
  - Web based form for the general characterisation of groundwater bodies;
  - Quality data exchange format; and
  - GIS maps and land use information.
  
- **Lead country:**

Federal Environment Agency Ltd. – Austria  
Dept. of Aquatic Ecology/Water Protection  
A-1090 Vienna, Spittelauer Lände 5  
Tel.: ++43 1 31304 3550; Fax: ++43 1 31304 3700
  
- **Participants:**
  - Federal Environment Agency Ltd., Austria (Project Leader);
  - AMINAL – Administration for Environment, Nature and Land Management, Belgium;
  - A.E.A.P. – Agence de l’eau Artois Picardie, France;
  - EPA – Environmental Protection Agency, Ireland;
  - Environment Agency of England, and Wales, United Kingdom;
  - GEUS – Geological Survey of Denmark and Greenland;
  - Hessisches Ministerium für Umwelt, Landwirtschaft und Forsten, Germany;
  - IGME – Institute of Geology and Mineral Exploration, Greece;
  - INAG – Instituto da Agua, Portugal;
  - Ministerio de Medio Ambiente, Spain;
  - RIVM – National Institute for Public Health and the Environment, The Netherlands;
  - quo data, Gesellschaft für Qualitätsmanagement und Statistik, Germany (sub-contractor).
  
- **Links with other activities:**

Results of this project will be essential to:

  - Project 2.1 : guidance on the analysis of pressures and impacts;
  - Project 2.7 : develop guidance on monitoring;
  - Project 2.9 : guidance on best practices in River Basin Planning.
  
- **Financing:**

This study has been initiated with financial support from:



- European Commission, DG Environment;
  - Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria;
  - "in Kind" contributions by participating partner countries.
- **Timetable:**
    - Project start           1 December, 1999;
    - 1st Workshop           3 / 4 April, 2000;
    - Interim report         31 January, 2001;
    - 2nd Workshop         8 – 9 March, 2001;
    - 3rd Workshop         2nd half of September 2001;
    - Project end            1 December 2001.
- **Project description:**
    - To cover the broad variability of groundwater bodies within the EU (different hydrogeological conditions, diffuse and point pollution sources, etc.) a consortium of **11 partners** was formed. In addition the German company "quo data" was subcontracted, in order to test and develop statistical methods in close co-operation with the Consortium leader;
    - In April 2000 a first workshop with the project partners and representatives of the contracting parties took place to discuss and to agree on the concept and timetable for the project. Data and information to be forwarded by the partners were discussed and defined. The information convened on include:
      - Information on the design of the monitoring network as well as on statistical assessment methods applied in the Member State;
      - General description of the groundwater bodies included in the study e.g. (hydro)geological conditions, land use, sources of pollution etc.;
      - Groundwater quality data e.g. oxygen concentrations, pH-value, electrical conductivity, nitrate, ammonium and pesticides with special emphasis on time series, (as these are needed to verify usability of methods developed for trend assessment);
      - Detailed information on the network design (distribution of monitoring sites, GIS maps, types of monitoring sites, sampling frequency, etc.).
    - The contributions from the partners so far comprise 16 groundwater bodies in eight different countries, covering various geological and hydrogeological types. Quality data for a total of 21 parameters have been made available. Apart from the parameters which are explicitly mentioned in the WFD (nitrate, ammonium, conductivity, dissolved oxygen and pH-value) additional information for a total of eight priority substances (pesticides, metals, chloride, tetrachloroethylene etc.) was provided for at least some groundwater bodies;
    - A web-site for data exchange and communication with access for all project partners and representatives of the contracting parties was established within this project. All documents relevant for the project have been made available to project partners from this site;
    - In the first interim report (end of January 2001) seven different methods for data aggregation at the groundwater body level are described in more detail. These methods were developed based on methods applied so far in various Member States as well as on discussions prior to the final version of the WFD. The methods will be discussed in detail (e.g. considering various types of groundwater pollution) by the experts at the next workshop foreseen for 8-9 March 2001. Furthermore, statistical

methods for the calculation of trends and trend reversal have been proposed and will be discussed at the workshop.

## INFORMATION SHEET

### Kay activity 2. Develop guidance on technical issues

#### Project 2.9 Guidance on best practices in River Basin Planning

- **General introduction**

The issues related to the development of River Basin Management Plans in the Water Framework Directive are the following:

- Identification and designation of River Basins and Districts (Article 3 and Annex I);
- The preparation of River Basin Plans (Article 13 Annex VII);
- The preparation of Programmes of measures at the River Basin level (article 11 and Annex VI);
- The issues related to information, consultation and public participation (Article 14).

There are different issues identified in the “Common Strategy on the Implementation of the Water Framework Directive” as subjects for common activities that may be necessary. Some related to the above include the limits and definition of River Basins; the methods for development of River Basin Management Plans and the issues related to public and stakeholder participation. The identification of River Basins and Districts together with the development of River Basin Management Plans and the associated programmes of measures poses important challenges to Member States. The importance of the River Basin approach has been also acknowledged in the Common Implementation Strategy in the identification of a key priority 6: “Integration of horizontal principles in River Basins”.

Given the content of the Directive and the concerns expressed by Member States it seems that in addition to the need to integrate the work of the horizontal lines there might be other specific activities that could be developed jointly in parallel in relation to:

- **The identification of the characteristics of River Basins and Districts** specially in relation to the definition of limits, to the operational size according to efficiency criteria and to the formulas for the incorporation of groundwater and coastal waters;
- **The characteristics required to the River Basin Authorities**, particularly when these exercise the co-ordination with other competent authorities;
- **The development of River Basin Management Plans** addressing issues such as different approaches and methods for planning, methods of use and analysis of information necessary for planning and planning tools, approaches to content of the planning guidelines, etc. Relationships between these Plans and those more detailed related to sub-basins, sectors, specific issues or water categories should be considered;
- **The knowledge of the scope of programmes of measures** addressing issues such as the identification of existing measures used in Member States, their effectiveness in terms of the objectives of the Directive, the existing and possible tools, testing their impact, etc.;
- **The participatory approaches in River Basins**. Particularly in what concerns the planning, formulation and pursuit processes, required by the Directive, but also in management and other fora. The issues related to stakeholder participation including who, when, how and where do stakeholders participate. The modality of

presentation of proposals and results should also be analysed in order to facilitate public participation.

For the development of the aforementioned activities it is necessary to support existing practices in the Member States, the conditions in which they have been established, their success and their limitations, in particular in what concerns the experiences of existing River Basins Organisations.

It is possible to identify two types of elements:

- The hard components related to information, methodologies and tools for River Basin Planning;
- The soft components related to the overall approach to planning that ensures participation of stakeholders.

These are developed below in the different work packages proposed.

- ***Objectives***

The overall objective is to help implement the Water Framework Directive Dispositions.

- To develop a common understanding of what are the options and scope of the requirements for characterisation and typology of River Basins;
- To determine common elements in the preparation of Rivers Basin Management Plans, including the programmes of Measures, and in the process of public participation so that they ensure the comparability of results;
- To ensure coherent implementation and comparability considering the need for each Member State to adopt solutions specific to their situations.

- ***Expected outcome***

Collection of information

- Identification of existing state of the art in the different Member States as well as the new Accession Countries and those countries with specific free trade zone agreements.

Development of Guidance

- To develop guidance in relation to identification of River Basins and Districts and their operative connection;
- To develop guidance in relation to River Basin Planning and development of programmes of measures;
- To develop specific guidance in relation to participatory approaches to River Basin Planning and management.

Development of technical tools

- To develop some common technical basis in relation to tools for River Basin Management.

Dissemination of results

- Results of the activities will be incorporated in specific reports that would be made accessible to Member States, specifically to River Basin Organisations, and stakeholders.

- ***Lead Country:***

Spain is proposed to lead this activity.

- *Participants:*

- *Link to other activities*

Although the project refers to the treatment of articles 3 (and Annexe I), 5 (and Annexe II), 13 (and Annexe VII), 14 and 11, in relation to measures from a generic point of view, during its development process, it will be necessary to study other aspects of the Water Framework Directive. For example:

- Environmental objectives (article 4) and possible exceptions that should be considered in River Management Plans;
- Matters referred to protected areas registers (article 5) and to water for human supply (article 6);
- Repercussion studies of human activities on water and results of economic analysis carried out according to Annexe III.

Specific links will be also required between this project and the projects below:

- **Develop guidance on economic analysis**, because the basic part of the Plan is constituted by the provisions of water supply and demand, so it's necessary to know the costs of services. The knowledge of the actual cost recovery structure should assure the design of measures for the implementation of the objectives of article 9;
- **Guidance on pressures and impacts analysis**, which will allow the detection of the main problems that should be considered in the programmes and typology of measures. These must be indirectly linked to the definition of reference conditions;
- **Application, testing and validation**. A link between the project results, related to individual activities, and its functionality within the overall of Plan measures should be developed.

- *Financing*

Open.

- *Timetable*

The proposed activities need to be carried out considering the tight deadlines posed by the Water Framework Directive. These include:

- The need to identify and define the boundaries of River Basin and Districts and identification appropriate competent authority, by 2003;
- The need to publicise the work programme to draw River Basin Management Plans, including a statement of the consultations measures, by 2006;
- The need to make public the draft River Basin Management Plans, by 2008;
- The need to submit River Basin Management Plans to the Commission and to any other Member State concerned, by 2009.

The activities related to the development of Guidelines for River Basin Identification would need to have a high priority because of tight deadlines (2003). It is also important to build on the momentum of the adoption of the Water Framework Directive to start the debate and disseminate the implications for River Basin Planning. This needs to be an on-going activity in parallel to other horizontal activities. The first expert meeting will take place in May 2001 in Brussels with the WWF/EC seminar on "Methodologies for the development of integrated River Basin Management Plans". The activities will start by a meeting of national experts that will take place in June 2001, followed by a Technical Conference with the participation of stakeholders during November 2001.

	2001 Jan.- June	2001 July- Dec.	2002 Jan.- June	2002 July- Dec.	2003	2004	2005	2006
<i>Output Package 1</i>	x	x						
<i>Output Package 2</i>		x	x	x	x			
<i>Output Package 3</i>			x	x	x	x		
<i>Output Package 4</i>				x	x	x	x	x
<i>Output Package 5</i>			x	x	x	x	x	x
<i>Output Package 6</i>	x	x	x	x	x	x	x	x

- **Project Description**

*Work package 1 - Scoping the work and setting up organisational arrangements*

- Creation of expert working group with participation of member states;
- Identification of main issues of concern and problems envisaged through consultation with Members States and existing River Basin Organisation in Europe;
- Definition of work to be undertaken and approach for co-ordination with existing work (international River Basin and other guidance work proposed in the Implementation Strategy);
- Identification of key stakeholders and country experts and existing documentation;
- Expert meeting for the preparation of contents of a technical seminar about existing experience related to River Basin identification;
- Expert meeting for the preparation of a technical Conference in relation to Basin Planning and Tools for River Basin Management in light of the requirements of the Water Framework Directive (see WWF/EC Brussels meeting May 2001);
- Defining work programme and costs;
- Carrying out Technical Conference (November 2001) to collect existing experience and identify main gaps and needs;

**Outcome:** Preparation of a report collecting information of existing priorities for development in Member States in relation to River basin identification and characterisation and River Basin Planning and management. Identification of main challenges.

*Work Package 2 - Development of Guidance*

- Meeting of experts to define the scope and the approach to Guidance and main country priorities (given the level of definition in annexes I, II, VI and VII);
- Consultation with River Basin Organisations managers and stakeholders;
- Identify gaps in information and contract out studies (focus on process or other implementation gaps);
- Develop draft guidelines for identification of River Basins; for the preparation of River Basin Management Plans and programmes of measures; and on participatory approaches to basin planning and management;
- Establish validation tools for testing the Guidance prepared, including pilot testing in one or more Members States and in consultation with stakeholders;
- Carrying out the second Technical Conference (Nov.- Dec. 2002) for discussion of draft guidelines;
- Prepare final Guidelines.

**Outcome:** Guidelines on selected practical aspects of river basin identification and river basin planning and management.

*Work Package 3 - Development of technical Tools for River Basin Management*

- Identification of existing management tools in countries;
- Identification of tools or groups of tools that can be used for implementation of the Water Framework Directive requirements;
- Development of descriptions and case studies of the use and efficiency of tools in different contexts for the achievement of the objectives of the Water Framework Directive (benchmarking);
- Preparation of a technical document on tools and related implementation issues.

**Outcome:** Tool box for River Basin Management and main implementation requirements.

*Work Package 4 - Dissemination of results*

- Preparation of dissemination programme;
- Pilot Workshops with specific representative River Basin Organisations and stakeholders;
- Preparation of dissemination materials;
- Strategy for *updating* dissemination programme and materials (feedback loops).

**Outcome:** Dissemination materials and events.

*Work Package 5 - Training*

- Identification of training needs;
- Pilot training sessions with stakeholders and river basin managers;
- Document best practice in training;
- Prepare training materials on the basis of pilot results.

**Outcome:** training package and recommendations.

*Work Package 6 - Establishing links*

- Co-ordination with existing work in International river basins;
- Co-ordination with work on going in horizontal activities;
- Focus on eventual integration of results in Priority 6.

**Outcome:** feed into other activities and insure co-ordination.

## INFORMATION SHEET

### Key activity 3: Improved Data and Information Management

#### Project 3.1 Development of a Geographical Information System (GIS)

- **General Introduction:**

The Water Framework Directive (WFD) introduces a new approach to data and information collection and reporting with emphasis on the placing of data and information into a dynamic context of driving forces, pressures, status, impacts and responses (DPSIR). Data and information is collected with a view to identifying trends and dynamics and more emphasis is put on the use of indicators for the DPSIR parameters. The WFD also introduces the basis for a modernised data and information management with certain requirements for using spatially referenced data within a Geographical Information System (GIS).

In order to prepare the ground for the more streamlined reporting process as required under the WFD, a number of preparatory analyses and reports are of importance. Of particular interest are the analyses, which must be finalised and reported to the Commission 4 years after the entry into force of the WFD, that is by the end of 2004. These analyses present information on river basin (natural) characteristics, economics of water use and human impact and pressures (DPI) and to a certain extent also status (S). Such information needs to be presented in the geographical context and can best be handled in the frame of a GIS.

Data and information on water is also reported to the European Environment Agency (EEA) through the EuroWaternet information system, which is extensively based on voluntary co-operation and provision of information from all involved parties. Also this system is in need of a GIS for geographically referencing the incoming information and for analysing spatial relationships.

During the Silkeborg meeting<sup>5</sup> in September 2000, WFD-experts, EEA experts from the Water Topic Centre and the Eurowaternet and experts from the JRC Space Applications Institute (SAI), showed a common interest in exploring possibilities for developing the structure and basic layers of such a European GIS, primarily adapted to and based on the information requirements of the WFD.

This European GIS will include layers on the river network, river basins and sub-catchments of different hierarchy with an associated coding system. It should also include some basic characteristics of the catchments. The data model proposed needs to be defined in such a way that it can accommodate the information resulting from the national obligations of the WFD or that it can be linked to national systems via the coding system.

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<sup>5</sup> *Joint Workshop of the EEA – EIONET Group and DG Environment – Water Framework Directive Expert Group on ‘Streamlined Reporting at the European Level’, NERI - Freshwater Centre, Silkeborg, Denmark, 5-6 September 2000.*



A final European GIS will most probably be based on a combination of compatible national systems and the proposed European system, which may be shared between Member States, the Commission and the European Environment Agency. This system should allow for a multi-scale approach, being able to provide more generalised (aggregated) information at the European level and detailed information at the level of the Member States, river basins and sub-basins. Most probably this implies individual systems, which have compatible data structures. As such the overall system should allow to retrieve and aggregate information on the physical, hydrological, socio-economic and administrative characteristics of rivers and lakes and their catchments. The definition of the database structure should allow to accommodate the various descriptors given in Annexes II and VII of the WFD, including, for example, information on type and size, terrain and relief characteristics, run-off regimes, climatology, geology, soils, land cover, population densities, and industrial activities. The later addition of information on anthropogenic pressures and environmental indicators should be anticipated.

All data will be geographically referenced and the system should allow to visualize data in their spatial location and context. An appropriate coding system can enable the analysis of spatial dependencies between rivers or catchments of different hierarchy. Such coding system will further support the analysis of the relationship between water bodies, catchment characteristics and environmental pressure indicators. The possibility to include information on groundwater bodies will have to be examined. Since the combined access of information related to catchments and information related to adjacent coastal and marine waters is of considerable benefit for the assessment of the impact of land-based activities on the ecological state of the coastal and marine environment a link to a GIS on coastal waters should be considered.

- **Objectives:**

The primary objective of the project is to develop a concept for and a prototype of a European Catchment GIS, compatible with the needs of the WFD and the EuroWaternet.

Specific objectives are to:

- Explore the possibilities for developing a shared GIS for use by Member States, River Basin Districts, the Commission and the EEA;
- Examine the compatibility between GIS used by various Member States, with focus on Member States sharing the same river basin district;
- Facilitate the use of validated data and information at all levels and across institutional barriers. Relevant users would include Member State organisations, transboundary river basins districts, the Commission and the EuroWaternet of the EEA;
- Facilitate free, non-proprietary access to information in such a GIS, without restrictions on the further use of such data.

- **Expected outcome:**

A concept for and a prototype of a European GIS of drainage networks, river basins and sub-catchments, including information on river and catchment characteristics.

- **Lead:**

Commission and JRC SAI – EGEO unit.

- **Participants:**

All Member States, EEA, Eurostat-GISCO.

- **Link to other Activities:**

Links to the following projects will be of use for defining the structure of the database and for testing its applicability:

- *Guidance on the Analysis of Pressures and Impacts* (Project 2.1): The indicators of pressure and impact defined in this project could potentially become part of the database;
- *Integrated Testing in Pilot River Basins* (Project 4.1): The system could be tested and verified for selected international river basins;
- *Guidance on the Development of Typology and Classification System for Transitional and Coastal Waters* (Project 2.4). The system could be tested and verified for coastal and marine areas.

- **Financing:**

To a very limited extent financing can be provided by the Space Applications Institute through its institutional projects. The Commission will support the project through financial assistance for the acquisition of data, the organisation of workshops and the invitation of experts. The EEA is allocating resources to the activity through its ETC/Water subventions and the EEA core activities on GIS. Member States will finance their participation in workshops and their activities in the frame of this working group. They could further support the activity through the provision of basic data such as Digital Elevation Data, if required for the derivation of catchment boundaries.

- **Timetable:**

The development of the shared GIS system should start as early as possible after the adoption of the Strategic Paper. Preparatory work has already begun at the EEA and the JRC-SAI. A first prototype of a European system covering the EU15 plus Norway and Switzerland should be available in the second half of 2002. The river network and catchment boundaries validated for accuracy and compatibility with national systems. Based on the outcome of this validation procedure, the system will be adapted and refined. Validation will be an iterative procedure. A final, stable system (with respect to the river network and catchment boundaries) should be available by the end of 2003.

WP	01-2001	02-2001	03-2001	04-2001	01-2002	02-2002	03-2002	04-2002	01-2003	02-2003	03-2003	04-2003
1	***	***	*									
2	*	***	***	***								
3			***	***	***							
4			***	***	***	***	*					
5			*	***	***	***	***	*				
6				*	***	***	***	**				
7								***	***	***	**	
8									*	***	***	***
Workshops			(a) ♦		(b) ♦							(c) ♦

### *Tasks*

- 1: *Preparatory work at JRC SAI*
- 2: *Data Acquisition and Preprocessing*
- 3: *Definition of Data Model*
- 4: *European-wide Derivation of Drainage Networks and Catchment Boundaries*
- 5: *Derivation of Catchment Characteristics*
- 6: *Development of a Coding System*
- 7: *Validation of river network and catchment boundaries*
- 8: *Finalisation*

### Workshops:

- *Kick-off (September 2001);*
- *Intermediate (March 2002);*
- *Final (November 2003).*

- ***Project Description:***

Based on the above description of the characteristics of European GIS, the working group needs to compare existing or planned national systems and systems of large international river basins in order to evaluate the possibilities to define a common basic structure allowing to exchange information between the various systems. At the same time a basic European system will be set up by the JRC, in accordance with the needs of the WFD and Eurowaternet. The compatibility of this system with national and river basin systems needs to be ensured through early discussions with the relevant organisations at national and river basin level. The working group should, therefore, carry out the following tasks:

1. Kick-off meeting at JRC Ispra, jointly organised by the Commission and the JRC-SAI. Topics to be covered include: finalisation of workplan and task distribution, information on national GIS systems, structure of a European GIS system, catchment characteristics and coding systems;
2. Discussion and agreement on the structure and format for the final database(s);
3. Exploring links between European, national and river basin systems;
4. European-wide acquisition and pre-processing of data necessary for the derivation of drainage networks and catchment boundaries;
5. Derivation of drainage networks and catchments for the European territory;
6. Derivation of catchment characteristics;
7. Definition of a European coding system;
8. Validation of the drainage networks and catchment boundaries in the European system:
  - 8.1. against accepted international and national data sets,
  - 8.2. data of MS authorities;
9. GISCO could ensure that the data format and the data documentation of the river and catchment data layers are in line with established standards;
10. Improvement and stabilization of the result through an iterative procedure according to the inputs from the various actors.

- ***Working methods:***

## INFORMATION SHEET

### Key activity 4: Application , testing, validation

#### Project 4.1: Integrated testing in pilot river basins

- **General Introduction:**

The implementation of a Common Strategy for the WFD is based on the development of guidance documents from Working Groups (WG) under Key Activity 2. Due to the wide range of activities, scope and specific objectives covered, as well as individual testing of techniques proposed by the WGs, the guidance methodologies will need to be validated in order to ensure that they are applicable and practical across the widest possible range of conditions (climatic, technical and political) found in the Member States of the EU and Accession Countries.

- **Objective:**

Ensure coherence amongst the different guidance documents and their cross applicability by testing the guidance documents in selected pilot river basins. To achieve these objectives a Network of pilot river basins and associated coastal zones (where applicable) will be identified, in close co-operation with WGs in Key Action 2, that are considered to represent a range of problems and conditions characteristic of those to be found in the application of the different guidelines. The Network of identified sites will be used for testing and cross-validation of proposed WG guidelines.

- **Expected outcome:**

Feed back for the different guidance documents and an overall guidance demonstrating important links between the different guidance documents and giving instructions on efficient integrated application. Moreover principal technical and management problems could be identified and pragmatic solutions could be developed. Further such an EU wide testing Network could, if monitored over the longer term, provide valuable comparative information on environmental trends resulting from the application of the WFD itself.

- **Lead :**

The Strategic Co-ordination Group will lead Key Activity 5 jointly with the Member States and Institutions in the selected pilot river basins. JRC-EI will be responsible for a technical Secretariat having as its mission to ensure:

- The practical day to day functioning of the project, information exchange, and support activities;
- That identified tasks carried out by the different groups involved are feasible and coherent with the objectives of the project;
- That the selected pilot river basins have comparable technical support to carry out their studies; and
- To ensure that efficient inter-comparison analysis between those studies is carried out.

- **Participants**

A network of Lead countries for the different guidance documents and participants from the local and regional water management administrations in the pilot river basins

including NGO's and stakeholders. The network will be made up of a central core composed by JRC-EI and the Lead countries for the different guidance documents, and will be subdivided in river basins.

- **Links with other activities/Working Groups:**

All Working Groups developing guidance documents. Further a number of Working Groups, notably 2.2, 2.4, 2.5, 2.6 and 2.7 have indicated that they will be selecting sites in order to test aspects of their individual guidance documents. Consideration will be needed on how best to make use of these various proposed sites (covering different eco-regions). Special attention is needed for the Inter-calibration Network (WG 2.5) to ensure that the sites chosen for testing and validation for WG 4.1 (Integrated testing in pilot river basins) are adequately covered by their proposed test points.

- **Financing**

Open.

- **Timetable:**

TP	2001				2002				2003				2004			
	01	02	03	04	01	02	03	04	01	02	03	04	01	02	03	04
1																
2																
3																
4																
5																

- **Project description (Task Packages):**

- TP1. Selection of pilot river basins;
- TP2. Creation of working groups for each pilot river basin;
- TP3. For each Guidance document and for each pilot river:
  - 3.1. Study and implementation of Guidance document
  - 3.2. Analysis of results, problems and solutions
  - 3.4. Feedback to Guidance working groups
- TP4. Compilation of experiences and development of a global approach;
  - 4.1. Intercomparison on Guidance documents applied to different pilot river basin
  - 4.2. Intercomparison of pilot river basins
  - 4.3. Analysis of relationships and contradictions (if any) between guidance documents
- TP5. Development of a training programme for the practical implementation of WFD.

- **Working methods:**

- A meeting of the core group will be held in which pilot river basins will be selected based on proposals from Member States (by July 2001) (by July 2001). The selection will be done in such a way that the pilot river basins are representative of different regional and climatic conditions, and ecosystem characteristics in Europe, and further, to assure that multiple water and soil pollution problems will be considered. This selection will be based on data availability, prior studies carried out at each test site, and system scale;
- Based on the selected pilot river basins a working group comprising local and regional

water management administrations, NGO's and stakeholders will be identified and formed by October 2001;

- A kick-off meeting of the network in which tasks distribution and planned schedule will be defined will be carried out at the end of 2001 beginning of 2002;
- Start of the integrated application of guidance documents by early 2002 (starting with those that are in practice available).

- ***Proposal for capacity building:***

In order to strengthen the development of a Common Strategy for the implementation of the WFD special attention must be given to training in the utilisation of guidance documents, in the techniques and methodologies used for their employment and the compatibility of application across EU Member States. This will be particularly important to ensure the reliability of the results and to decrease the risk of distortion and divergence of measures underpinning the efficient application of the Framework Water Directive.

## **ANNEX III - OVERALL WORK PROGRAMME**

PROJECTS / ACTIVITIES	2000												2001												2002												2003				2004				2005				2006			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12
<b>KEY ACTIVITY 1 Information sharing</b>																																																				
<b>1. Tools for information sharing</b>												LEAD: Commission												WFD requirements:																												
<i>Internet page (first version)</i>																																																				
<i>Electronic interest group</i>																																																				
<b>2. Raising awareness</b>												LEAD: Commission												WFD requirements:																												
<i>Brochure on WFD</i>																																																				
<i>National and International workshop</i>												x x x x x x x x x x x x												x x x x x																												
<b>KEY ACTIVITY 2 Develop guidance on technical issues</b>																																																				
<b>1. Analysis of pressures and impacts</b>												LEAD: UK ; Germany												WFD requirements: Article 5 ; Annex II, sections 1.4, 1.5, 2.3, 2.4 and 2.5																												
<i>Collection of information</i>												x x x																																								
<i>Identification of technical tools / Development of guidance</i>												x x x x x x x x x x												x x x x x x x x x																												
<i>Dissemination of results</i>																								x																												
<i>Elaboration of final version of guidance produced</i>																								x x x																												
<b>2. Designation of heavily modified bodies of water</b>												LEAD: UK ; Germany												WFD requirements: Article 4 ; Annex II, sections 1.1, 1.3 and 1.4 ; Annex V, sections 1.1.5 and 1.2.5																												
<b>I) Member States case studies</b>																																																				
<i>Application of HMVW designation process</i>												x x x x x x x x x x x x x x x x																																								
<i>Definition of maximum and good ecological potential</i>												x x x x x x x x x x x x x x																																								
<b>II) European Synthesis Project</b>																																																				
<i>Synthesis of Member States case studies project</i>												x x x x x x x x x x												x x x x x x																												
<i>Clarification of concepts used on the designation process</i>												x x x x x x x x x x												x x x x x x																												
<i>Clarification of concepts related to ecological potential</i>												x x x x x x x x x x												x x x x x x																												
<b>3. Classification of inland surface water status and identification of reference conditions</b>												LEAD: Sweden												WFD requirements: Article 5 ; Annex II, 1.1, 1.2.1, 1.2.2 and 1.3 ; Annex V, 1.1.1, 1.1.2, 1.2.1 and 1.2.2																												
<i>Elaboration of work programme / Establishment of website</i>												x x																																								
<i>Establishment of common understanding of concepts and terms</i>												x x x x x x x x x x x x												x x x x x x x x x x x x x x																												
<i>Review of techniques</i>												x x x x																																								
<i>Evaluation of techniques</i>												x x x x x x																																								
<i>Elaboration of first protocol</i>																								x x x x x																												
<i>Review and validation of the protocol</i>																								x x x x x x																												
<i>Elaboration of final version</i>																								x x																												
<b>4. Development of typology and classification systems of transitional and coastal waters</b>												LEAD: UK ; Spain ; EEA												WFD requirements: Article 5 ; Annex II, 1.1, 1.2.3, 1.2.4 and 1.3 ; Annex V, 1.1.3, 1.1.4, 1.2.3 and 1.2.4																												
<i>Design of a typology system</i>												x x x x x x x x x x												x x x x x x x																												
<i>Establishment of a classification scheme</i>												x x x x x x x x x x												x x x x x x x																												
<i>Development of guidance</i>												x x x x x x x x x x												x x x x x x x																												
<b>5. Guidance on a protocol for inter-calibration</b>												LEAD: EC-JRC/ EI												WFD requirements: Annex V, section 1.4.1																												
<i>Definition of scientific and technical basis for the inter-calibration network</i>												x x x x x x x x x x												x x x x x x x x x x																												
<i>Identification of sites through expert judgement and joint inspections</i>																								x x x x																												
<i>Registration of the inter-calibration sites</i>																								x x x x																												
<i>Inter-calibration exercise</i>																								x x x x x x																												
<i>Results of the inter-calibration exercise</i>																								x x																												

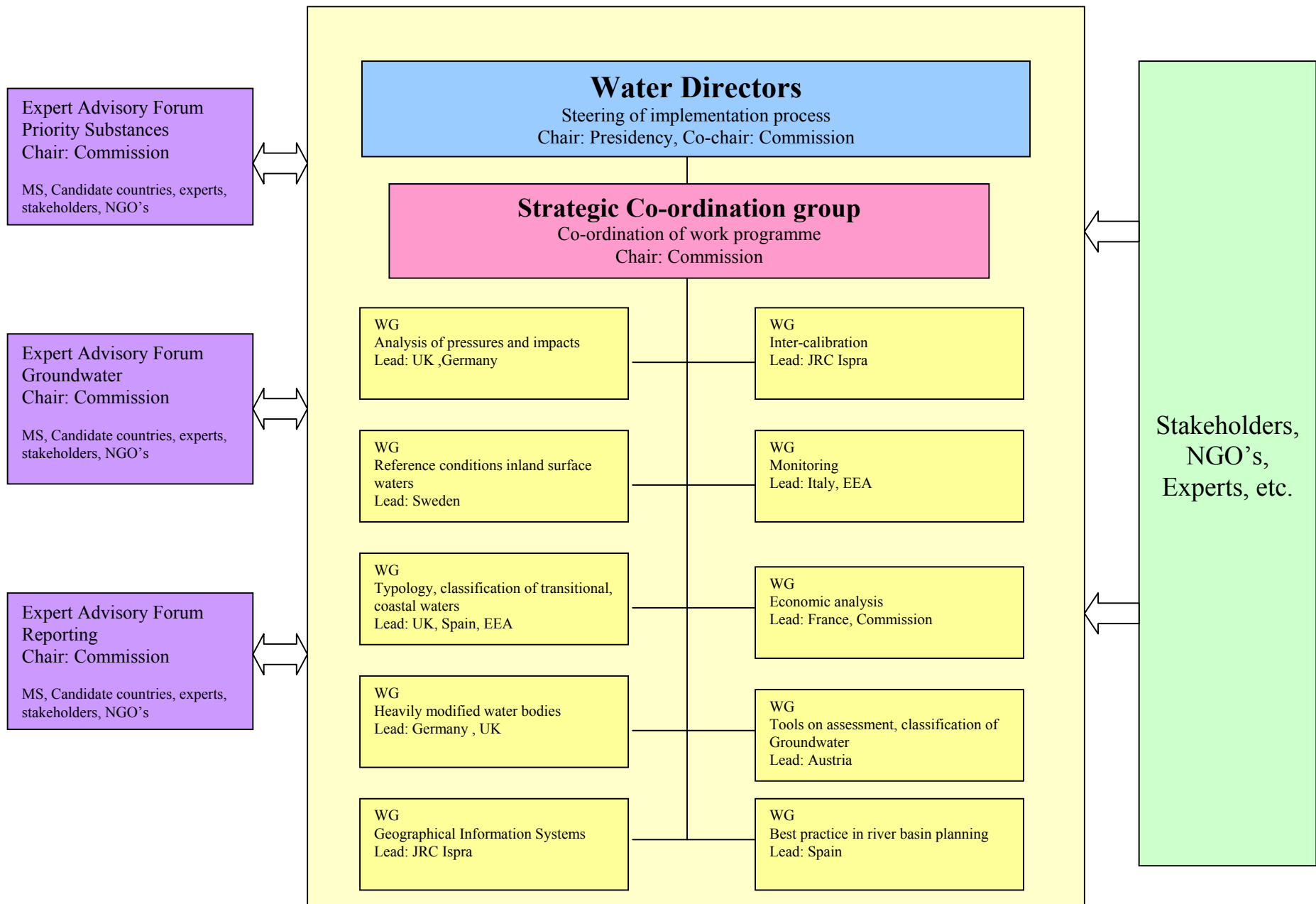


PROJECTS / ACTIVITIES	2000												2001												2002												2003				2004				2005				2006			
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12
<b>6. Economic analysis</b>													LEAD: France ; Commission												WFD requirements: Article 5 ; Article 9 ; Annex III																											
Review of existing experiences												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																									
Development of draft guidelines												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Tests in pilot river basins /Validation												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Agreement on the guidelines												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
<b>7. Monitoring</b>													LEAD: Italy ; Commission												WFD requirements: Article 7 ; Article 8 ; Annex V, section 1.3, 2.2 and 2.4																											
Program and organisation												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Guidance on monitoring of inland surface waters												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Guidance on monitoring of transitional and coastal waters												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Guidance on monitoring of groundwaters												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																										
Monitoring data																																				x	x	x	x	x	x	x	x	x	x	x	x					
Dissemination of results																																				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
<b>8. Assessment and classification of groundwater</b>													LEAD: Austria												WFD requirements: Article 4 ; Article 17 ; Annex V 2.1.2, 2.3.2, 2.4.4 and 2.4.5																											
Elaboration of a first interim report				x	x	x	x	x	x	x	x	x	x																																							
Discussion of methods														x																																						
Elaboration of the final report															x	x	x	x	x	x	x	x	x																													
<b>9. Best practices in River Basin Planning</b>													LEAD: Spain												WFD requirements: Article 3 ; Article 11 ; Article 13 ; Article 14 ; Annex I ; Annex VI ; Annex VII																											
Review of information												x	x	x	x	x	x	x	x	x	x	x																														
Development of guidance																	x	x	x	x	x	x	x	x	x	x																										
Development of technical tools / Implementation requirements																								x	x	x																										
Dissemination of results																																				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Training																								x	x	x										x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Co-ordination and integration with other activities													x	x	x	x	x	x	x	x	x	x	x	x	x	x										x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
<b>KEY ACTIVITY 3 Information and data management</b>																																																				
<b>1. Development of a common GIS</b>													LEAD: EC-JRC/SAI												WFD requirements: Annex II and Annex III																											
Preparatory Work												x	x	x	x	x	x																																			
Data Acquisition and Preprocessing															x	x	x	x	x	x	x	x	x																													
Definition of Data Model																		x	x	x	x	x	x	x	x	x																										
Derivation of Drainage Network and Catchments																		x	x	x	x	x	x	x	x	x																										
Catchment Characteristics and Coding																			x	x	x	x	x	x	x	x																										
Validation and Finalisation																																																				
<b>KEY ACTIVITY 4 Application, testing and validation</b>																																																				
													LEAD: Strategic group												WFD requirements:																											
Identification of pilot river basins													x	x	x	x	x	x																																		
Integrated application of guidance documents																								x	x	x																										



## **ANNEX IV - ORGANISATIONAL STRUCTURE**







## **ANNEX V - COMPETENCE OF THE ARTICLE 21-COMMITTEE**





## COMMITTEE COMPETENCE

- **Adapt Annex I (20)**
- **Adapt III (20)**
- **Adapt section 1.3.6 of Annex V (list of standards for monitoring of quality elements) (20)**
- **Adopt guidelines for implementation of Annex II and Annex V (20)**
- **Adopt technical formats for transmission and processing data, including statistical and cartographic data, in relation to all above points (20)**
- **Lay down technical specifications and standardised methods for analysis and monitoring of water status (8)**
- **Adaptation of a draft register of sites for an inter-calibration network (V.1.4.1.vii) by 2004**
- **Finalisation of inter-calibration exercise and values for Member States monitoring system classification by medio 2006 (V.1.4.1.viii)**