WFD and Hydromorphology

European Workshop

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Workshop summary report

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1 Introduction

1.1 Objectives of the workshop

At their meeting in June 2005 in Luxembourg, Water Directors agreed to initiate a new activity on the WFD and hydromorphology as part of the Common Implementation Strategy (CIS) of the Water Framework Directive (WFD). This new activity will reflect the importance of hydromorphological pressures on the aquatic environment, as highlighted in the Article 5 reports. Water Directors also recognised the need to integrate the water policy with relevant policy sectors and economic activities, such as energy (hydropower) and transport (navigation and ports).

Against this background, a European workshop on WFD and Hydromorphology took place on 17-19 October 2005 in Prague. Under the auspices of the UK Presidency of the EU, the workshop was jointly organised by the UK, Germany and the European Commission, kindly hosted by the Ministry of Environment of the Czech Republic, with the support of Ecologic.

More than 100 delegates from 24 countries participated in this workshop. Delegates included representatives of Member States and accession countries, the European Commission as well as representatives from relevant European-level organisations and stakeholder groups.

The main aim of the workshop was to discuss a draft mandate for the new CIS activity on WFD and hydromorphology.[1] In this context, the workshop aimed at providing a forum to identify work on hydromorphological pressures and impacts that could usefully be undertaken as part of the CIS. The workshop recommendations would then assist in revising the mandate before submitting it to the Water Directors at their meeting on 28-29 November 2005 in London (United Kingdom).

The mandate proposed that the new CIS activity on WFD and hydromorphology should consider both policy and technical issues with particular focus on navigation, hydropower and flood defence. To this aim, two types of activities were proposed:

- A technical activity to develop follow-up work on hydromorphological issues including the identification of good practice on restoration and mitigation measures. The purpose is to facilitate the exchange of information on, and where possible identify common criteria for, the hydromorphological conditions considered necessary to enable the achievement of Good Ecological Potential (GEP).
- A policy integration activity targeted at recommendations for better integration between water policy and other policies that can lead to hydromorphological pressures. The initial focus will be on interactions between water policy and energy (hydropower), transport (navigation) and flood management policy.

[1] Draft mandate for an activity on “Water Framework Directive and hydromorphological pressures resulting from hydropower, navigation and flood defence activities”, Phase I: 2006, Common Implementation Strategy for the Water Framework Directive “Work Programme: 2005/2006”.

1.2 Structure of the workshop

The workshop discussions were structured according to the key areas of activity proposed by the mandate, i.e. policy integration and technical issues of hydromorphology.

The first day of the workshop explored how policy integration issues could be addressed as part of the follow-up CIS activity on hydromorphological issues.

The second day focused on technical issues and it specifically provided an opportunity for participants to exchange information on the following:

- Criteria for risk assessment of hydromorphological pressures,
- Criteria for the identification and designation of HMWB, and
- Hydromorphological mitigation measures compatible with some of the main water uses, such as hydropower, navigation and flood defence.

A paper, which was circulated to participants prior to the workshop, outlined key questions for discussion on the technical issues.[2]

The exchange of information on technical issues was supported by presentations of case studies and aimed at enabling Member States to share expertise and to promote consistent approaches. Technical discussions took place both in plenary sessions and in parallel working groups. In each parallel working group, delegates were asked to present a summary of the relevant work and views of their country or their organisation.

The third day of the workshop started off with plenary reports from the working groups of the previous day to discuss and reach conclusions on the technical aspects of the draft mandate.

The key draft conclusions of the workshop on both policy integration and technical issues were summarised by the UK, Germany and the European Commission and discussed in the last plenary session.

1.3 Structure of this report

This report summarises the main workshop discussions and recommendations. After an overview of the issues raised during the workshop opening sessions, the report follows a structure according to the 3 main themes of the workshop:

- Policy integration,
- Assessment criteria, including criteria for risk assessment of hydromorphological pressures and criteria for the identification and designation of HMWB,
- Hydromorphological mitigation measures.

Final recommendations and key conclusions on each of the 3 themes are given at the end of the respective thematic sections in this report (section 3.2 on policy integration, section 4.3 on assessment criteria and section 5.3 on mitigation measures).

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[2] Technical Issues Paper for Workshop Day 2, European Workshop on “WFD and Hydromorphology”, 17-19 October 2005, Prague. Available online: http://www.ecologic-events.de/hydromorphology/background.htm.

Finally, the workshop recommendations for the revision process of key aspects of the draft mandate for a new CIS activity on WFD and hydromorphology are presented in section 6. The annex to this report includes the final mandate, as agreed by the Water Directors.

The workshop programme, all workshop presentations and the list of participants are available online on the workshop website:

http://www.ecologic-events.de/hydromorphology/programme.htm

http://www.ecologic-events.de/hydromorphology/presentations.htm

http://www.ecologic-events.de/hydromorphology/documents/prague_participants.pdf

2 Opening sessions

Pavel Puncochar, Water Director of the Czech Republic, gave a welcoming speech in the first session of this workshop. Subsequently, Fritz Holzwarth (Water Director of Germany) and Richard Bird (Water Director of the UK) opened the workshop. It was emphasised that discussions in this workshop should not be seen as a single exercise but as part of a series of interlinked activities in the Common Implementation Strategy of the WFD. This workshop also provides the starting point for an open and transparent process to find the right balance between water protection and certain uses of water.

Following the opening speeches, Gilles Crossnier (DG Environment, European Commission) introduced the main elements of the draft mandate for a new CIS activity on WFD and hydromorphology.

At this stage, the opportunity was given to the workshop participants for first reactions on the content of the draft mandate. Interventions focused mainly on the following:

- The mandate should have a clear focus on ecology and biological quality elements. It is also important to focus on mitigation measures that could improve ecological conditions. Especially, the link of mitigation measures with ecology is a key issue for planning measures in order to improve ecological status.

  At the same time, however, it was emphasised that duplication of work should be avoided. It was clarified that the new CIS activity on hydromorphology will not focus on defining Good and Maximum Ecological Potential (GEP/MEP), but input will be requested from the existing CIS ECOSTAT group. All relevant links between different CIS activities should be established.

- The mandate should not focus only on mitigation but be broadened to consider also restoration and prevention. Thus, it was agreed that there is a need for a hierarchy in measures taken.

- So far, assessments have been biased towards large water bodies, especially rivers. The mandate should not only focus on large water bodies, but should also consider the numerous small water bodies under hydromorphological pressures and impacts across Europe. It was proposed to structure future discussions according to the main

hydromorphological pressures with an overview of both large and small water bodies in Europe. In the same context, however, it was also argued that measures which can be taken for small water bodies are very site-specific. Therefore, it is difficult to develop common understanding across Europe in this respect.

- The draft mandate should not focus only on the three driving forces of hydropower, navigation and flood defence but it should deal with all hydromorphological drivers including irrigation and water supply.
- It was proposed to separate the steering group of the new CIS activity on hydromorphology into a steering group on policy issues and a steering group on technical issues. On this, the European Commission clarified that there should be only one steering group for the new activity with both policy and technical basis.
- Requests were made for clarification on who is going to be involved in the proposed follow-up activities and how information exchange will take place in practice. It was clarified that the SCG will discuss the best mechanism for that.

The second session of the workshop was important in introducing key hydromorphological issues from the river basin characterisation (Article 5 reports). John Wood (WRc) presented a summary of the analysis of the WFD Article 5 reports in relation to hydromorphology, followed by a presentation of hydromorphological issues in the Danube Basin Analysis Roof Report (by Birgit Vogel, ICPDR).

In this context, it was noted that different countries have used different approaches in their reporting with respect to hydromorphology. These differences make it a difficult task to summarise the relevant information and pose the need for clarification.

Finally, it was emphasised that there is a need for more transparency, trust and future re-assessment of the initial risk assessment and provisional identification of HMWB.

3 Policy integration

3.1 Discussions

Policy integration issues were discussed in detail on day 1 (plenary session III) and day 3 (closing plenary session VII) of the workshop. The first information exchange took place on day 1 in the context of presentations from the following:

- The European Commission (DG Environment and DG for Energy and Transport),
- The hydropower sector (Eurelectric and European Small Hydropower Association),
- The navigation sector (WFD Navigation Task Group and European Barge Union),
- Environmental NGOs (WWF, RSPB and European Environmental Bureau).

The key questions on policy integration issues were the following:

Questions on policy integration
• How are different policies likely to interact with the implementation of the WFD (e.g. synergistic, antagonistic)? • Which policy interactions will have the most significant effect on implementation? • What are the key things that could be done to better integrate these policies with the water policy? • What are the potential benefits of work on policy integration in the follow-up CIS activity? • What should be the objectives and structure of follow-up work on policy integration?

In the plenary discussions on day 1 and day 3, several proposals were made on the policy integration aspects of the new CIS activity on WFD and hydromorphology:

Policy integration deliverables

- In order for the draft mandate to promote policy integration, it was proposed to deliver only one policy paper with annexes for the different sectors (hydropower, navigation and flood defence), instead of three separate deliverables. The proposal was welcomed by the European Commission.

Interpretation of policy integration

- It should be emphasised that integration is not a one-way process.
- It was emphasised that environmental objectives are the core of the WFD. Therefore, it should be kept in mind that we should be integrating to achieve these environmental objectives and not be integrating per se.
- It should be more concretely described what policy integration is, e.g. in terms of funding instruments, legal instruments etc.

Levels and authorities

- It should be clarified that policy integration is not needed only on the EU and Member State levels, but also on a regional and river basin level.
- The experiences of national authorities relevant to energy and transport should be integrated in the process. The European Commission welcomed the contribution of relevant national authorities to the working groups at the EU level, where relevant.
- It was emphasised that transparency is important also in planning processes where other types of authorities are involved, e.g. specific port authorities. In this respect, it was confirmed that the aim is to establish co-operation between all relevant authorities.

Comments on specific policy sectors

- For the navigation sector, it was argued that current standards for navigation are only technical while environmental issues are not considered yet in the external costs of this mode of transport. It was confirmed that consideration of environmental issues still needs to be done. In this respect, the aim of policy integration should be to explore how to identify external costs in a common way and have a broader approach to cost-benefit analysis given the respective legal requirements of the WFD.
- Although it was not disputed that unnecessary adverse impacts should be avoided, it was proposed to focus on adverse impacts from necessary infrastructures.
- In terms of flood management policy, it should be better emphasised that the WFD purpose (Art. 1) is to contribute to the mitigation of the effects of floods and droughts.
- It was proposed to aim for integration also with other policy sectors which are relevant to the WFD, such as fisheries policy. There is need at least for awareness on such additional issues. In this context, the European Commission emphasised that in order to be pragmatic, the mandate at present deals with a first phase of activities on certain sectors. At a later phase, focus could be placed also on additional sectors.
- It was proposed that integration objectives should also include nature conservation and biodiversity (Habitats and Birds Directive). In this respect, it was noted that nature conservation is already part of the general philosophy of the WFD given the Directive’s specific provisions for protected areas.

3.2 Key conclusions on policy integration

On the basis of the draft mandate and the plenary discussions on day 1 and day 3 of the workshop, key conclusions on policy integration were drawn in the final plenary session.

Integration is a key goal of the WFD

- The purpose of the WFD includes the following:
  - Protect and improve the water environment,
  - Promote sustainable water use,
  - Contribute to mitigating the effects of floods and droughts.
- The provisions for protected areas integrate EU conservation policy (Natura 2000) into water management.
- Hydropower, navigation and flood defence are recognised in EU policies and initiatives as important and legitimate water uses.
- Successful implementation means achieving an appropriate balance between protection and use.

Vision for the role of the WFD in policy integration

- Recital: “This Directive should provide a basis for a continued dialogue and for the development of strategies towards a further integration of policy areas”

Integration is a two-way process

- The WFD does not impose fixed objectives for the water environment.
- It provides Member States with the flexibility to set objectives that reflect environmental, social and economic needs and priorities.
- This flexibility means that the needs and priorities of other policy areas can be taken into account in water management decisions.
- Policy antagonisms will arise if this flexibility is not used appropriately, or if other policy areas do not provide comparable flexibility.

Using the WFD’s flexibility

This was exemplified by the flexibility provided by the WFD in the process of HMWB designation. We can designate a water body as heavily modified if:

- Restoration would have a significant adverse effect on navigation, hydropower, flood defence, water supply, and
- Providing the benefits of these water uses by other significantly less environmentally damaging means would be technically unfeasible or disproportionately expensive.

In many cases, it will be obvious that this would be the case. If time is wasted on complicated economic analyses to prove it, no time will be available to integrate other policy objectives into our objectives for the water environment.

Integration is needed at different levels

- At European level, e.g. through co-operation with the relevant Commission DGs,
- At national level, e.g. through co-operation between those responsible for land use planning and those responsible for river basin planning,
- At river basin district level, e.g. through co-operation with the navigation commissions for the Danube and Rhine international river basin districts.

Key policy recommendations

- Ensure that EU flood defence policy, energy policy and navigation policy continue to provide comparable flexibility to accommodate other environmental, social and economic considerations,
- Take account of the benefits of flood defence, hydropower, navigation and other water uses in setting objectives for the water environment,

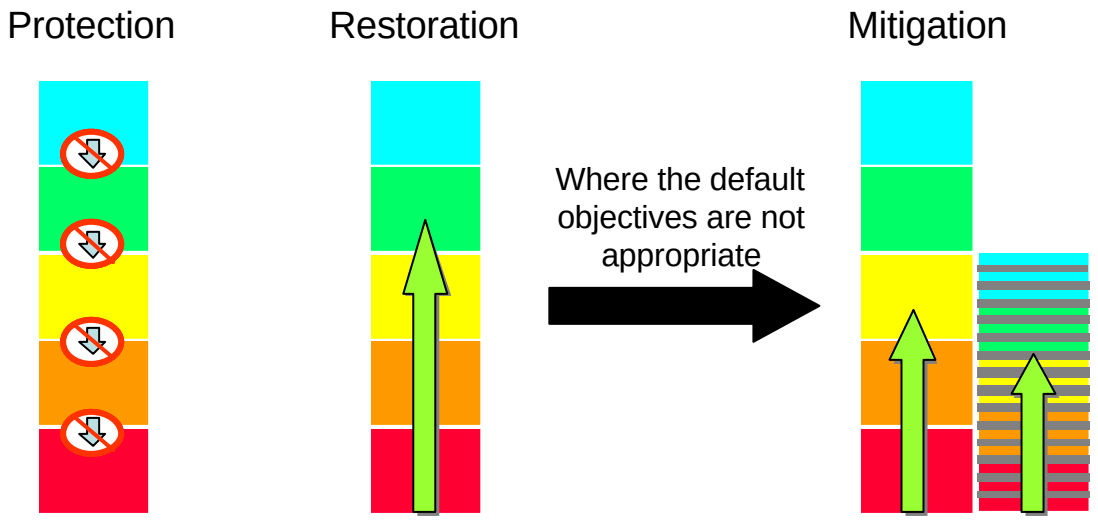
- Ensure that agricultural policy and cohesion policy take account of water management objectives in order to increase synergisms and reduce antagonisms,
- Where possible, consider the hierarchy “protection-restoration-mitigation” in actions and measures taken, as illustrated in the figure below.

Water protection goal

- Where possible, avoid the need for particular water uses in locations where those water uses would cause deterioration of status, e.g. land use planning policies restricting development on floodplains and hence the need for flood defence.
- **Policy integration goal:** Ensure other policy areas take account of the protection objectives of water management.
- Where possible, deliver other policy objectives using technologies that do not cause deterioration of status, e.g. setting flood embankments back from the edge of the river to make more space for the river to flood.
- **Policy integration goal:** Ensure other policy areas allow flexibility to take into account social, economic and environmental costs and benefits in deciding how to achieve their objectives.

Water restoration and mitigation goals

- Where possible, ensure other policies are used to help deliver restoration objectives for the water environment, e.g. use of agricultural support payments to promote agricultural practices that reduce significant hydromorphological pressures (e.g. fencing-off river banks).
- Policy integration goal: Other policy areas should take account of, and promote, the types of measures that would help restore, or mitigate impacts on, the water environment. This policy goal has links to the technical follow-up CIS activity on mitigation measures.



Recommendations for the follow-up CIS activity on policy integration

- Aim to deliver improvements in the integration of water policy, EU flood action policy, navigation policy, energy policy and cohesion policy by 2008 if possible.
- Take forward relevant agriculture and water policy integration issues in the Water Directors' initiative on agriculture and water.
- Collate and exchange case study information on mechanisms being used for effective policy integration at Member State and river basin district levels.
- Identify if work on other policy areas, such as fisheries policy, would be useful in the future.

4 Assessment criteria

The workshop focused, on the one hand, on hydromorphological risk assessment criteria used in the pressures and impacts analysis of the Art. 5 reports and, on the other hand, on criteria for the identification and designation of heavily modified water bodies (HMWB). These two topics are, actually, partly interlinked within the HMWB identification and designation process.

Information exchange on assessment criteria was mainly achieved in the context of parallel working groups on day 2 of the workshop. Two working groups focused on hydromorphological risk assessment criteria and two working groups focused on HMWB identification and designation criteria.

Plenary presentations and introductory presentations to the working groups gave examples of criteria and methods that have been used in river basin characterisation work to date or that are being developed to support the next stages of implementation.

4.1 Hydromorphological risk assessment criteria

4.1.1 Key questions for discussion

The key questions selected for in-depth discussion in the working groups on hydromorphological risk assessment criteria were:

Questions for discussion in the working groups
• How have you so far assessed risks from hydromorphological alterations?
• What steps are you planning to take to confirm and refine risk assessment results during further characterisation work? How will this work feed into the development of programmes of measures?
• What follow-up work on risk assessment criteria could be undertaken as part of the CIS?

4.1.2 Findings of working groups

In the following, the results of the working group discussions on hydromorphological risk assessment criteria are presented.

4.1.2.1 Working Group: Risk criteria (I)

Risk assessment from hydromorphological alterations so far

The following were identified as common aspects in the risk assessment activities so far:

- Risk assessment is completed in most countries, but some are still working on it.
- There has been more focus on rivers (few assessments for lakes, e.g. in Finland).
- The uses and pressures considered have been similar.
- Mainly abiotic data have been used in risk assessment. Biological data are not available at a large scale and they are gradually being added to the risk assessment.
- 3-4 different risk categories were established in most countries.
- Both morphological and hydrological aspects have been considered.
- Expert judgement has played a role in all countries.
- A high degree of uncertainty in risk assessment was mentioned by all participants.

The following are some main differences in the risk assessment approaches used:

- Some countries identified all, while some countries only part of the water bodies “hydromorphologically at risk” as provisionally heavily modified.
- Risk criteria were chosen according to different focus areas. Some countries, such as Latvia and Norway, used information on uses and pressures. Other countries focused on hydromorphological criteria (e.g. number of weirs) to perform the risk assessment.
- Different thresholds were used by different countries to identify significant risks (e.g. at risk when > 15% or > 50% of river length affected).

Future steps of risk assessment and link to the programme of measures

With respect to further work on hydromorphological risk assessment, the following were concluded:

- Countries will continue with the collection of data (mainly biological but also other data) to validate risk assessment.
- Fish and macroinvertebrates will be used as biological indicators for hydromorphological changes in the next implementation steps.
- Research projects should be initiated on the correlation between hydromorphology and biology.
- More work will be carried out on clarifying the status of water bodies so far assessed as “probably at risk”.

- It was proposed to start working on the programme of measures immediately (without further assessment) for water bodies “at risk” of poor and bad status.
- It was proposed to develop a classification system for hydromorphology as background for drafting the programmes of measures.
- More work is needed on the better communication of risk criteria and results to the public through wider participation.

Proposals for follow-up CIS work on risk assessment criteria

Mid-term perspective

- It was proposed to establish a forum for exchanging information between Member States and other stakeholders on measures and research projects planned (web-based forum supported by small workshops). Such a forum would assist in:
  - Identification of possible synergies,
  - Learning opportunities for all countries involved,
  - Reduction of work.
- It would be useful to suggest mitigation measures for different uses as a European approach and with emphasis on good practice.
- Further research should be supported not on a European but rather on the regional level in Member States with similar uses, water body types and problems.

Shorter-term perspective

- It was proposed to:
  - Make summaries of the Article 5 reports available on the internet for quick reference. This could be done on the basis of a template for summary (max. 5 pages).
  - Produce an overview table of risk assessment criteria used for specific pressures.
  - Make a Europe-wide analysis on setting thresholds for risk assessment.
  - Make the European overview produced by the EC consultants on numbers of provisional HMWB and water bodies at risk available to Member States for further development and update.

4.1.2.2 Working Group: Risk criteria (II)

Risk assessment from hydromorphological alterations so far

- In some cases, risk assessment has been purely descriptive.
- Where quantitative criteria are used, they vary between countries.
- In practice, differences in % risk criteria, i.e. risk according to the % of the water body impacted, may in some cases not be very important. Small differences in % thresholds, e.g. between 50% and 70%, may not largely affect the risk assessment result.

Nevertheless, larger differences in thresholds, e.g. between 30% and 70%, may lead to quite different risk assessment results.

- It was emphasised that the % risk criteria should measure the difference between reference conditions and the level of change of the water body.
- Also other types of risk criteria were used with absolute values, such as the height of a weir (e.g. water body at risk if weir higher than 30 cm or 20 cm).
- In most cases, hydromorphological risk criteria were used but, in some cases, risk assessment was also verified with biological assessment.

Future steps of risk assessment and link to the programme of measures

- Some Member States plan to revise their hydromorphological risk assessment criteria.
- There is much discussion on how biology can be included to improve the hydromorphological risk assessment. To do that, two ways were mentioned:
  - Improve the link between hydromorphological criteria and ecology,
  - Use appropriate biological monitoring for hydromorphological changes.
- Open issues of concern regarding further risk-assessment work are:
  - The effort level to be expended on hydromorphological risk assessment,
  - Timing, especially in terms of collecting appropriate biological data in time for the programme of measures.
- The working group also exchanged views on how to move from hydromorphological risk assessment to the programme of measures. In principle, two similar approaches were discussed:
  - Focusing efforts for measures on middle-risk water bodies. However, it was pointed out that even in high-risk water bodies (e.g. certain reservoirs), it may be possible to take certain mitigation measures to make marginal improvements (e.g. changes in operation).
  - Prioritising measures within different water sectors using cost-benefit analysis.

Proposals for follow-up CIS work on risk assessment criteria

- Information exchange on linking hydromorphological risk criteria with biology.
- Development of biological monitoring tools to measure hydromorphological impacts.
- The extent to which these proposed areas of work can be developed will be driven by the available time in the first cycle of River Basin Management Planning (RBMP). For some pressures like reservoirs and dams, it may be relatively easy to develop biological monitoring tools, whereas for other pressures like channelisation, it may be more difficult.
- The ways discussed to develop the proposed follow-up work included:
  - Setting up networks of people working on these issues,
  - Involving stakeholders.

4.2 Criteria for identifying and designating HMWB

4.2.1 Key questions for discussion

The key questions selected for in-depth discussion in the working groups on HMWB identification and designation criteria were:

Questions for discussion in the working groups
• What methods and criteria have you used to identify provisional HMWB? • What work do you plan to undertake and what criteria do you plan to use to confirm the designation of HMWB? • What follow-up work on HMWB identification and designation criteria could be undertaken as part of the CIS?

4.2.2 Findings of working groups

In the following, the results of the working group discussions on HMWB identification and designation criteria are presented.

4.2.2.1 Working Group: HMWB criteria (I)

Work and criteria for the provisional identification of HMWB

- Uses considered in provisional HMWB identification were differentiated into direct ones (flood defence, navigation/ports, hydropower etc) and indirect ones (land use, forestry, agriculture, population density).
- The range of techniques used for the provisional identification of HMWB included maps/GIS, hydromorphological data/techniques, biological data/evidence as well as expert knowledge.
- The range of impacts considered included physical modifications, morphological, hydrological and biological impacts.
- Wide ranging criteria were used for the provisional identification of HMWB, for example:
  - > 50% water body modification in Scotland,
  - > 70% water body modification in Germany,
  - Presence of major ports (requiring environmental impact assessment) in Ireland,
  - 60% flow reduction in Norway.
- Variations were observed in the extent of provisionally identified HMWB (pHMWB) in different countries. Approximate percentages of pHMWB for selected countries were mentioned (1% in Ireland, 8% in Portugal, 10% in Scotland, 30% in Germany, 50% in England & Wales, 60% of AWB in the Netherlands). Also, regional variations were observed within Member States.
- Some issues and questions on the provisional identification of HMWB were the following:

- Variations in water bodies “hydromorphologically at risk” and pHMWB (in some cases, all water bodies “at risk” were identified as pHMWB; in other cases, only some water bodies “at risk” were identified as pHMWB).
- Variations in the range of techniques used to assess hydromorphological impacts (hydrological data, morphological data, and, in some cases, use of biological data).
- Different views on the role of small modifications (e.g. small hydroelectric power plants or small ports) in provisional identification of HMWB.
- Role of natural impacts.
- Option of considering the HMWB designation tests (WFD Articles 4(3a) & 4(3b)) at the provisional identification phase.
- Role of sediment management and impacts.
- Role of small water bodies (smaller than the WFD minimum size threshold) in provisional identification of HMWB.

Work and criteria for the designation of HMWB

- Three main areas of work were discussed in terms of the designation of HMWB:
  - Validation of assumptions in the risk assessment,
  - Assessment of restoration options,
  - Economic tools/assessments.
- Before proceeding to HMWB designation, the inconsistencies of the risk assessment (Article 5 characterisation reports) should be clarified. To this aim, the following sources of data were proposed:
  - Development of databases, GIS and remote sensing data,
  - Collection of field data (hydromorphological data, biological data, data available from stakeholders).
- For the assessment of restoration options:
  - Simple guidance should be developed.
  - Good practice is available.
  - Further development is required.
  - Clarification of hydromorphological – biological improvements is needed.
  - Simple lists of measures that do and do not work would be helpful.
- In terms of economic tools/assessments, the following were noted:
  - UK economic tools are under development.
  - EU cost effectiveness programme is underway.
  - Further development of guidance is required across Europe.

Proposals for follow-up CIS work on HMWB identification and designation criteria

- Information exchange was characterised as invaluable, especially with respect to:
  - Assessment methods and criteria,
  - Good practice,
  - Mitigation measures,
  - Economic assessment tools.
- Information exchange activities are needed at different levels: across Member States, for different water body types and different water sectors and uses.
- Further work is needed on the following:
  - Review of existing best practice examples, which would allow reaching the objective of good ecological status instead of designating HMWB.
  - The practical implications of HMWB designation as compared to less stringent objectives.
  - Integration with the activities of the ECOSTAT working group and the Pilot River Basins of the CIS.
  - Impacts of sediment management.

4.2.2.2 Working Group: HMWB criteria (II)

Work and criteria for the provisional identification of HMWB

Several common themes in the provisional HMWB identification were identified:

- The use of a step-wise approach.
- The use of first outputs of risk assessment.
- In some cases, the ‘substantial change’ test (% and/or reversibility) was added.
- Pressures most commonly found were assessed.
- Provisional HMWB identification was based on data where available, but also on some expert judgement.

Common issues of concern were:

- The availability of data (hydromorphological and ecological),
- The assumptions/knowledge of the relationship between hydromorphology and ecology,
- The provisional identification of drainage ditches as HMWB,
- Implications for rivers downstream of impoundments,
- Temporal and spatial scale of changes.

Work and criteria for the designation of HMWB

- Better understanding of the links between hydromorphology and ecology (via monitoring) is needed.
- Assessing costs at a regional level could be problematic.
- Things should be kept simple for implementation and decision-making at the regional level (e.g. with respect to the GEP definition and financial assessment).
- HMWB designation will likely rely on expert judgement.

Proposals for follow-up CIS work on HMWB identification and designation criteria

- Share approaches to economic decision making (no need for developing explicit guidance). It would be useful to share experiences of costing and valuing as well as views on the link between economics tests for HMWB and economic analysis elsewhere in the WFD.
- Explore issues of scale (time and space).
- Promote the investigation of the links between hydromorphology and ecology (likely longer term gains).

4.3 Key conclusions on assessment criteria

During the final plenary session, the following key conclusions on assessment criteria were drawn on the basis of discussions in the working groups:

State of play

- The most important driving forces for the hydromorphological water quality are hydropower, flood protection, agriculture and navigation on a European scale; in addition urbanisation and irrigation on a regional level are of high importance.
- The most important pressures identified are: dams & weirs causing disruption of continuity and impoundments; changing of profiles; maintenance including sediment management; straightening; water level fluctuations and bank fixation. Some Member States have used pressure criteria for assessment purposes.
- The assessment criteria used are sometimes comparable (e.g. impoundments, disruption of continuity), but sometimes not (e.g. dykes). Where the criteria are comparable, the used thresholds are not (e.g. length of impoundments). This is also evident for the scale of the assessment.
- Some Member States have used the “at risk” criteria also as criteria for provisional HMWB identification, while other Member States have used two different sets of criteria. There are no indications that provisional HMWB are not assessed as water bodies at risk.

Recommendations for follow-up CIS work on assessment criteria

- It is emphasised that not only the criteria used for the risk assessment, but also those used for provisional HMWB designation should be biologically validated using the best available information.
- Restoration and mitigation measures should be prepared for the programmes of measures based on the best current knowledge on ecological effectiveness.
- In the CIS mandate, a specific task on the relationship between hydromorphological criteria and biological quality elements should be introduced on the basis of current knowledge. Further good practice examples for specific uses should be prepared.
- The presented interim results on the evaluation of the Art. 5 reports indicate a lack of submitted data and a difficulty in interpreting data. Therefore, the final version of the evaluation should be checked and updated by Member States if necessary.
- Information exchange on current work of WFD implementation is recommended, e.g. on assessment methods related to hydromorphological parameters and biological response.
- The information exchange should be facilitated by developing a synthesis of current work.

In the final plenary session, discussions relevant to the key conclusions on assessment criteria pointed out the following:

- Biological validation of assessment criteria should be carried out also considering the need for certain confidence on the results of the measures taken. At the same time, uncertainty on the effectiveness of measures was acknowledged in the discussions.
- Biological validation of assessment criteria is necessary but should not be done on a compulsory basis. It is unlikely that this will happen in all Member States for the 1st RBMP cycle due to the lack of available data on a large scale.
- It was emphasised that much experience is already available on restoration and mitigation measures. Existing networks, such as the European Centre for River Restoration, should be used for providing information.
- Regarding follow-up work on the links of hydromorphology and biology, it was emphasised that, at a first stage, the aim should not be to develop perfect understanding of the relevant issues but to follow a pragmatic approach according to the time available. Nonetheless, a plea was made for being pragmatic in the direction of achieving the WFD goal of good ecological status.
- It was proposed to also follow-up the issue of sediment management more explicitly, as well as the issue of scale. It was clarified that the issue of sediment may be considered in follow-up activities, but discussing the issue of scale on a European level would be difficult.

5 Mitigation measures for addressing the impacts of hydromorphological alterations

The identification of mitigation measures is a key step in the development of the draft river basin management plan and one which will be needed as soon as possible. The precise definition of the mitigation measures appropriate in any given situation is likely to depend to some extent on the particular characteristics of the water body and the water use concerned. Certain types of mitigation measures are likely to be compatible with certain types of water use.

Against this background, the workshop focused on mitigation measures compatible with hydropower generation, with navigation (including port facilities) as well as with flood defence.

Information exchange on mitigation measures was mainly achieved in the context of parallel working groups on day 2 of the workshop. Two working groups focused on mitigation measures for hydropower generation, one group focused on mitigation measures for navigation and one group focused on mitigation measures for flood defence.

Plenary presentations and introductory presentations to the parallel working groups gave relevant examples of work on identifying mitigation measures.

5.1 Key questions for discussion

The key questions selected for in-depth discussion in the working groups on mitigation measures were:

Questions for discussion in the working groups
• a) What process have you used/intend to use to identify mitigation measures compatible with the specific use? b) Describe mitigation measures you consider likely to be compatible with the specific use. c) Give examples of incompatible measures due to adverse impacts on the specific use. • a) Describe your system for ensuring all practicable mitigation measures are taken in case of new modifications. b) Give examples of mitigation measures likely to be practicable in relation to new modifications. • What follow-up work on hydromorphological mitigation measures could be undertaken as part of the CIS?

5.2 Findings of working groups

In the following, the results of the working group discussions on hydromorphological mitigation measures are presented.

5.2.1 Working Group: Hydropower (I)

Identification of mitigation measures compatible with hydropower

- Working group participants concluded the following on mitigation measures which are compatible with hydropower generation:
  - Any mitigation measure is open to discussion, when it is only a question of investment and not of loss of energy generation. Of course, decisions for appropriate measures must be taken on a case-by-case basis.
  - Water flow management is a compatible measure, including redistribution of flow in time and ensuring minimum residual flow.
  - Fish passes are a compatible, important mitigation measure, which is commonly used across Europe in relation to hydropower generation. However, there is evidence that several existing fish passes are inefficient. Additionally, there is still lack of data on the effects of hydromorphological alterations on fish populations. Therefore, it was proposed that the focus regarding the construction of fish passes should be on the requirements of the fish populations.
  - A new regulation in Germany was discussed as an example of policy to promote mitigation measures compatible with hydropower. The specific regulation rewards energy production in small & medium hydropower plants when they undertake specific ecological measures.
- The working group concluded that mitigation measures which are considered incompatible with hydropower use are mainly those which result in the loss of peak energy generation. Nevertheless, even in these cases, there are possible measures which can be taken, such as compensation reservoirs.
- It was also pointed that there is lack of information on mitigation measures for the issue of sediment transport and contamination (e.g. heavy metals).
- As part of the process of defining appropriate mitigation measures, the interpretation of significant adverse effects of measures on hydropower was also discussed.
  - On the one hand, there were arguments for a case-by-case basis assessment only of significant adverse effects.
  - On the other hand, there were some views on, firstly, setting national goals (e.g. on the % of national energy production from hydropower) and, secondly, dealing with individual cases.

Mitigation measures practicable in case of new hydropower developments

- In some countries, before planning new hydropower schemes, old schemes will be modernised and adapted to new environmental standards.
- Fish passes are now a standard mitigation measure used for most new hydropower developments.

- It was proposed that for new hydropower developments, the process of ensuring river continuity should be done on a catchment level (not on the level of single water bodies or sites).

Proposals for follow-up CIS work on hydromorphological mitigation measures

- It was proposed to use and, if necessary, enlarge the existing network of the “Subgroup Hydropower” to develop the following areas of work:
  - Produce lists of mitigation measures for hydropower generation, as soon as possible, to use in the 1st cycle of RBMP.
  - Exchange information on processes of identifying mitigation measures (including issues of cost-benefit analysis).
  - Consider aspects relevant to small hydropower plants.
  - Consider hydropeaking, in specific, in terms of possible mitigation measures.
  - Develop a network on European standards for fish passes (in cooperation with fish ecologists).

5.2.2 Working Group: Hydropower (II)

Identification of mitigation measures compatible with hydropower

- In general, it was concluded that the Good Ecological Potential is not a ‚stand alone‘ objective, but it is defined by the mitigation measures compatible with the use.
- There are no mitigation measures that are in principal incompatible with hydropower.
- However, each measure will have a financial cost and an impact on CO_2 emissions.
- Mitigation measures need to be justified on the basis of their ecological benefit.
- There are no mitigation measures that would be necessary at every case/site to meet Good Ecological Potential.
- It may be possible that a hierarchy of mitigation measures could be developed.
- Because there are no mitigation measures that are never possible and no measures that are always necessary, there is a risk of having to consider hundreds of individual measures at every site.
- To avoid this, guidance could be developed to identify the circumstances in which specific measures would be appropriate.
- The guidance could take the form of scenarios of typical cases (e.g. run-off-river/reservoir, high/low head, etc.).
- The guidance needs to consider not only the individual water body scale but also the whole catchment or river basin.

- Pre-and post-cheme construction monitoring is needed to improve understanding of the effectiveness of measures.
- For new hydropower developments, there is greater scope for considering some measures like location and re-profiling littoral zones.
- There is a need to adopt a planning cycle approach to refine the process of selecting measures and defining Good Ecological Potential (plan-act-monitor-review).

Proposals for follow-up CIS work on hydromorphological mitigation measures

- The proposal to develop guidance at an EU level for the design and operation of fish passes and screens was supported.

5.2.3 Working Group: Navigation

Identification of mitigation measures compatible with navigation

- A wide range of activities are currently undertaken by relevant stakeholders, which were present in the working group (PIANC and CEDA).
- Specifically for the pressure of dredging, possible mitigation measures were discussed, such as imposing seasonal and tidal constraints on dredging, constraint on overflow from dredger, passage planning and vessel movement, keeping certain areas out of use and habitat mitigation in the case of dredging.
- Various mitigation measures in the area of navigation maintenance exist, mostly in response to current regulations at the national and international level.
- There is need for the exchange of information, consultation and building trust between sectors and regulators.

Mitigation measures practicable in case of new navigation developments

- Mitigation measures applied so far (for existing navigation) can/could equally be applied to new alterations.
- Procedures of identifying measures for new modifications are similar to those for existing navigation. However, use of best practices should be expanded.
- There was general consensus that the precautionary approach should be the overriding principle.
- It is necessary to consider natural and climate variability in designing mitigation measures.

Proposals for follow-up CIS work on hydromorphological mitigation measures

- Support information and consultation to increase transparency on the necessary tasks to maintain navigation (in accordance with and building on WFD Art.14).
- Facilitate the exchange of good or best existing practice among Member States and all relevant actors involved.

- Include the issue of sediment in the discussion process. In this respect, clear linkage should be established to other relevant aspects of the WFD implementation, such as priority substances, to avoid duplication of work.
- Examine the issue of the design of ships and navigation corridors.
- Explore linkage of navigation (and measures) to other uses – cross-references should be strengthened.
- Co-ordinate WFD/CIS activities with other international, national regulations and guidance to achieve a coherent legislative framework.
- Explore the long-term and short-term dimensions and steps of the programmes of measures, e.g. with view to technological developments.
- No isolated sub-working group on navigation is needed but rather a concerted activity on different sectors (also addressing common impacts). For example, dredging is not only necessary for navigation but also to maintain land use (agriculture and urban development).
- Establish mitigation measures as a central topic for future activities and go beyond discussions on the designation of water bodies.
- Provide further guidance on communicating knowledge on technical issues to a wider range of stakeholders.
- Include all relevant stakeholder groups in the steering group of the new CIS activity on WFD and hydromorphology.

5.2.4 Working Group: Flood defence and other hydromorphological drivers

The working group addressed mitigation measures with respect to existing and planned flood defence and made recommendations for the follow-up CIS activity.

In the majority of countries, hydromorphological alterations made (at least in part) for flood risk management purposes have been identified as placing water bodies at risk.

Although discussions mainly focused on flood defence, hydromorphological alterations for land drainage purposes (particularly in northern Europe) and for water supply (including irrigation in southern Europe) were also mentioned as important.

Synergisms - facilitating restoration goals

- Flood risk is increasing.
- Providing traditional engineering solutions everywhere is becoming uneconomic.
- Flood managers see making space for river and coastal flooding as a key part of future flood risk management strategies.

  Such an approach is potentially ‘win-win’ for flood risk management and the water environment (e.g. restoration to good ecological status).

Links to policy integration

- To make space for flooding and promote synergy, we will need supportive agricultural policies and urban land use planning policies.
- **Recommendation**: This issue should be taken forward as part of the follow-up activity on policy integration.

Flood risk management planning

- Effective flood risk management planning has to take account of the river basin scale and long-term trends (e.g. in climate).
- There are obvious advantages of making use of the national and international river basin planning systems being set up under the WFD.
- **Recommendation**: The EU flood management initiative should take account of the potential synergies with river basin management planning. In flood risk management, use should be made of the administrative arrangements being established for river basin planning.

Other synergisms

- In some cases, land use policies have increased flood risk and risks to the water environment. Examples include intensive agriculture in upland areas leading to increased rates of rainwater run-off as well as urban development on flood plains increasing the pressure to provide flood defence.
- **Recommendation**: This shared need for synergistic land use and agricultural policies should be addressed in the follow-up activity on policy integration.

Hierarchy of mitigation measures - in terms of costs

The following hierarchy of mitigation measures, in terms of costs, was proposed:

- First, change maintenance practice or stop maintenance.
- Secondly, design improvements within the constraints of existing hard engineering structures.
- Thirdly, design improvements involving replacement of hard engineering structures with softer approaches.

It was also argued that it is cheaper to time environmental improvements to coincide with planned works on flood defence structures. For example, if a flood wall is to be replaced because it has come to the end of its life, that is also the best time, from a cost point of view, to seek environmental improvements.

Sharing information on mitigation measures

- There is a lot of information on mitigation measures at least in some countries.
- **Recommendation**: Collate this information into a list of potential mitigation measures for hydromorphological alterations associated with flood risk management.

Information is needed on effectiveness of mitigation measures in the following aspects:

- Ecological effectiveness of different mitigation measures.
- Flood risk management effectiveness of different mitigation measures. It was proposed to increase information on effectiveness from case studies and information on the degree of expert consensus.
- Timing of effectiveness. The improvements resulting from some mitigation measures (e.g. stop maintenance) will take many years.

The list of potential mitigation measures should not be prescriptive

- The choice of appropriate mitigation measures will depend on local circumstances.
- Often flood defence structures are multi-purpose.
- Mitigation measures need to be planned at a river basin level.

Link to other EU activities

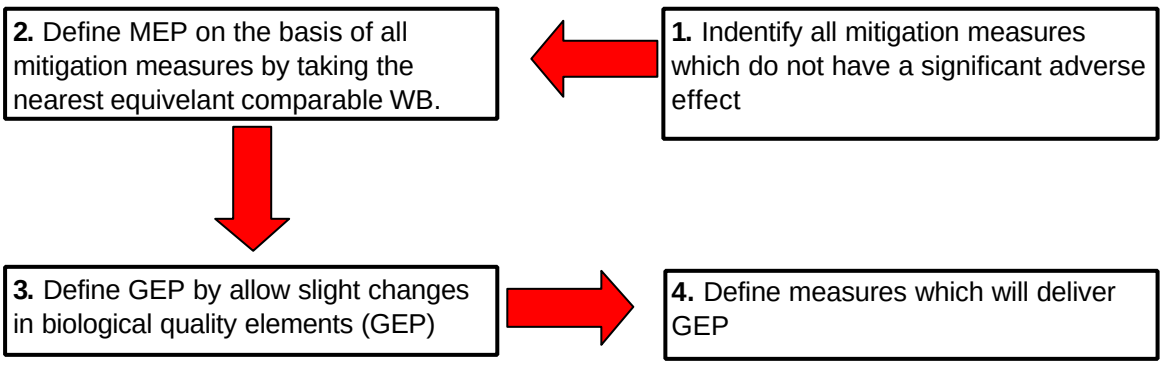
- **Recommendation**: The follow-up activity on hydromorphological mitigation measures should be coordinated with work on the EU flood action programme.

5.3 Key conclusions on hydromorphological mitigation measures

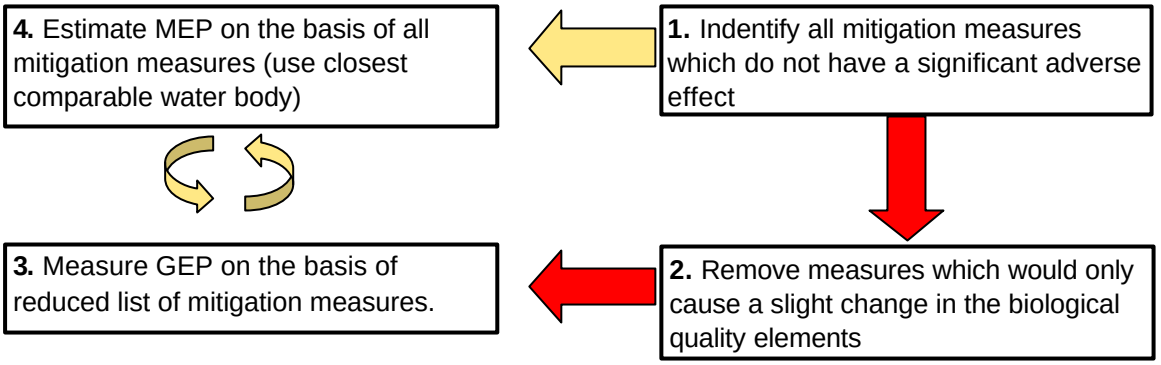
During the final plenary session, the following key conclusions on hydromorphological mitigation measures were drawn on the basis of discussions in the working groups:

Guidance on defining MEP/GEP

- The existing guidance (see figure below) on how to define MEP/GEP needs to be refined.



- The proposed guidance on defining MEP/GEP (see figure below) will ensure that the process is practical and can be delivered on time.



- It is emphasised that GEP is not a “stand alone” objective but is defined by the mitigation measures compatible with the use.

Development of a list of mitigation measures

- It is proposed to develop a list of mitigation measures, as soon as possible, as suggested by the following table:

pressure	impact	measure	effectiveness	
dredging	a	1	high	
	a	2	medium	
	c	3	slight	
water transfer	a	1	high	
	a	3	medium	
Regulated flow	b	1	slight	
	c	2	high	
	c	3	medium	
		4	slight	
		5	slight	

- The proposed list:
  - Should include all measures for sectors/impacts.
  - Should be developed from existing lists.
  - Should not be a prescriptive list of measures to be applied at all sites.

- Should not include measures which have a significant adverse effect upon the use (i.e. not compromise use).
- Should include measures which have a biological benefit.
- Should include information on costs/benefits

Application of listed measures

- The following table gives an example for the application of the proposed list of measures:

pressure	impact	measure	effectiveness	
dredging	a	1	high	
	a	2	medium	
	c	3	slight	
water transfer	a	1	high	
	a	3	medium	
Regulated flow	b	1	slight	
	c	2	high	
	c	3	medium	
		4	slight	
		5	slight	

- Site-specific application will involve assessing the effectiveness of measures at the site.
- MEP is defined by all measures which are biologically effective.
- GEP is defined by listed measures excluding those that only have a slight ecological benefit.
- Any measures which are disproportionately expensive at a site/sector level may be eligible for exemption according to WFD articles 4(4) & 4(5).

Other generic conclusions

- Longer term planning is needed
  - In the planning cycle, we should learn from the application of measures.
  - There is need to monitor mitigation measures.
  - There is need to refine the process of selecting measures and MEP/GEP.

- New developments
  - It is possible to define “up-to-date” mitigation measures which are difficult to apply retrospectively.
- Interaction between drivers
  - In practice, individual lists for drivers will have to be applied to multi-use structures (hydropower/flood defence).
- Catchment scale assessment is important for flood defence and fish passages.
- It is proposed to develop European standards for fish passage design. The mechanism to deliver this should be defined.

What can the CIS deliver

- Facilitate:
  - The exchange/collation of lists of mitigation measures and their assessment for hydropower, flood defence & navigation,
  - The collation of case studies representing good practice in the use of mitigation measures.
- Confirm the refinement of the process of MEP/GEP definition (proposed guidance).
- The steering group of the new activity on WFD and hydromorphology should develop existing networks (e.g. the Hydropower Subgroup), where this will allow experts to develop joint proposals.
- Stakeholder involvement would be useful.

General statement

- For the proposed follow-up work to be useful, it must be ready by 2006.
- There is a need for quick and simple agreed principles, because the identification of measures and setting alternative objectives have to be done before the end of 2008.

In the final plenary session, discussions relevant to the key conclusions on mitigation measures pointed out the following:

- Regarding the proposed model for the development of a list of mitigation measures, it was emphasised that the meaning of “significant adverse effect” is not clear yet. The significance of adverse effects will be different in different sites for different uses.
- It was requested to cautiously approach the proposed guidance on defining MEP/GEP. It was, nevertheless, emphasised that the proposed guidance concentrates on practical issues for the first steps of the 1st RBMP cycle, leaving the theoretical issues (MEP) last.
- In the context of follow-up CIS work on mitigation measures, it was suggested not to carry out work separately on the different sectors of hydropower, navigation and flood defence. Some mitigation measures may be common for these sectors.
- The follow-up CIS work should not only focus on the exchange of case study information on mitigation measures compatible with the different uses. The follow-up should be broader and include an assessment of standards from an ecological perspective.

6 Revision of the draft mandate

The closing workshop discussions focused on key recommendations for revising the draft mandate for a new CIS activity on WFD and hydromorphology.

Final recommendations on the policy integration part of the mandate have been presented in section 3.2 of this report. Final recommendations on the technical part of the mandate were presented in section 4.3 (assessment criteria) and section 5.3 (mitigation measures) of this report.

In addition, the following set of concrete recommendations were made on how to further develop key aspects of the draft mandate:

Improvements to the mandate – main points

The following points need to be further clarified:

- Links with other working groups: flood action programme; WFD & Agriculture; Research.
- Hierarchy of actions: Protection; Restoration; Mitigation.

The following points need to be added to the proposed activities of the mandate:

- Pragmatic approaches on restoration and mitigation measures in the context of the designation tests for HMWB .
- Most practical way to define MEP and GEP – open question to the CIS ECOSTAT group.
- Information exchange on the links between hydromorphological conditions and biological status.

Deadlines

- The composition of the steering group for the new activity on WFD and hydromorphology will be discussed by the SCG. The SCG would be asked for volunteer participants at its meeting on 26-27 October 2005.
- Workshop participants were invited to submit any additional written comments on the draft mandate by 25 October 2005.

Suggestions for the deliverables of the new CIS activity

- The proposed policy paper should focus on the common understanding of the key features of each policy (including water) as a starting point (clarification of frequently asked questions).
- The proposed technical paper should involve exchange of information not only on technical mitigation measures but also on cooperation processes between different authorities and stakeholders.

The workshop recommendations for revising the draft mandate were submitted to the SCG of the CIS. Subsequently, a revised mandate version was discussed and agreed at the Water Directors’ meeting on 28-29 November 2005 in London (see final mandate in the Annex to this report).

7 General conclusion

All in all, the workshop succeeded in supporting European exchange on the assessment and management of hydromorphological pressures. The participants presented and discussed their own experiences and concerns with respect to the relevant requirements of the WFD and at the same time exchanged ideas on how to overcome difficulties.

The workshop was highly appreciated by the participants, since it facilitated exchange between countries and stakeholders and provided input to future activities on the WFD and hydromorphology on the CIS level.

8 Annex: Final mandate for a new activity on WFD and hydromorphology

Common Implementation Strategy for the Water Framework Directive **“Work Programme 2005/2006”**	

Mandate for an activity on “Water Framework Directive and hydromorphological pressures”

First phase: resulting from hydropower, navigation and flood defence activities”

Phase I: 2006

i. Introduction

In early 2005, MS have delivered their reports on the risk assessment of water bodies according to Art. 5 WFD. Inter alia Art. 5 of the WFD has required a review of the impact of human activity on the status of surface water bodies, i.e. the identification of the type and magnitude of significant anthropogenic pressures including point sources, diffuse sources of pollution, abstraction or regulation and hydromorphological alterations as well as an assessment of their impacts according to the technical specifications set out in Annexes II 1.4/1.5.

The risk analysis has been supported by several CIS activities, e.g. the IMPRESS and HMWB guidance documents.

The reports on risk analysis of the MS have shown that hydromorphological changes are one of the most important pressures resulting in a high percentage of surface water bodies probably failing the good ecological status. In addition a high percentage of surface water bodies have been provisionally identified as heavily modified water bodies (HMWB).

The main hydromorphological driving forces identified in risk analysis are hydropower, flood protection, navigation and agriculture. Other activities such as urbanisation, gravel and water abstractions (e.g. for irrigation), outdoor recreation activities and fisheries are also of some importance. Hydromorphological alterations are often undertaken for more than one reason, e.g. a multi purpose dam for hydropower generation, flood protection, and water abstraction or river channelisation for navigation and flood protection.

The main hydromorphological alterations driven by these forces are dams/weirs, surface water body maintenance e.g. sediment management, channelisation/straightening, land

drainage, alterations of the surface water body profile. These alterations cause hydromorphological changes such as disruption of sediment transport, alteration of the hydraulic and hydrological characteristics (e.g. reduced water flow), loss of flooding areas, drying of wetlands as well as disruption of the biological continuity and direct damage of biota. The impacts of these subsequent changes and effects endangered the occurrence of the type specific aquatic communities, i.e. the good ecological status.

Therefore the Water Directors agreed at their meeting in Luxembourg in June 2005 to start a new activity referring to hydromorphological alterations as one of the most important pressures on surface water bodies resulting in a high percentage of surface water bodies probably failing the good ecological status.

The main aim of this activity is:

- To identify how best to manage synergisms and antagonisms between the management of hydromorphological alterations in river basin management planning and the requirements of other policies (e.g. renewable energy, transport and flood management). Taking into account WFD requirements, economic tools shall contribute towards this goal by appraising social, economic and environmental impacts and benefits
- To exchange information on approaches to the assessment and management of significant hydromorphological pressures and impacts in order to facilitate the transfer of expertise between Member States and to promote common and comparable approaches to implementation;
- To exchange information on approaches and strategies for the protection and/or restoration from hydromorphological deteriorations
- To identify available knowledge about the link between hydromorphological changes and ecological/biological impacts.
- To identify pragmatic approaches to the designation tests for HMWBs .

Phase I of the activity (2006) will focus on navigation, hydropower and flood defence. A second phase (post 2006) could be launched for other pressures building on the experiences/results of phase 1.

ii. Objectives and key subjects

The objective of the activity will be to identify and share good practice approaches

- to managing the adverse impacts of water uses on the hydromorphological characteristics of surface water bodies and
- to analyse and report on the designation tests.

The activity will consider both technical and policy issues, and will focus for that first phase on navigation, hydropower and flood defence.

Some of the key questions emerging from the current discussions are:

- Are specific recommendations on good practice for avoiding deterioration, restoration and mitigation instruments and measures useful?
- How can the co-operation and exchange of information between the competent authorities for the relevant policies and stakeholders be optimised in order that they make full use of their potential to support each other’s objectives?
- What is the extent of the hydromorphological pressures and impacts resulting from human activity (especially from flood-defence, hydropower and navigation activities)?

- Where are the potential areas of conflicts of those activities with the water policy?
- What instruments and measures exist or should be established to reconcile those different policies and what result do they achieve/are likely to achieve as regards reducing the pressures?
- What technologies and infrastructure designs exist that deliver relevant/desired water uses while being GES compatible/ consistent?
- How does new available knowledge about forthcoming GES and GEP standards impact on pre-designation strategy? How to take into account these new available elements when proceeding to the final designation of HMWB?
- How can hydropower generation and programmes of measures under the WFD be managed?
- What are the fundamentals of surface water maintenance for navigation including sediment management concerning GES or GEP? How can a common understanding be developed?
- How can we build on the experience gained by the delivery of conservation and biodiversity objectives and use the synergies to develop better results?
- How to combine the experiences of the current practice of local authorities with the outlines of the designation tests provided by the HMWB guidance ?

Answering those questions will require 2 different types of approach:

- A technical approach, targeted at the identification of good practice in relation to preventing deterioration, restoring hydromorphological conditions and mitigation measures. Knowledge and research gaps will also be identified
- A political approach, targeted to policy recommendations for a better integration between the different policies.

As those 2 approaches are from different levels, with a different relevant audience, it is proposed to split the mandate into 2 different but linked activities.

iii. Technical Activity

Purpose

The purpose of the technical activity is to facilitate the exchange of information on, and where possible identify common criteria for, the hydromorphological conditions considered necessary to enable the achievement of good ecological status; and mitigation measures considered necessary to enable the achievement of good ecological potential. Information exchange on existing cooperation processes between the different relevant authorities and stakeholders is also part of the activity.

Scope

The workshop held in Prague on 17th – 19th October 2005 has helped in assessing the extent of the impact of hydromorphological alterations across Europe and the main causes of these alterations.

The assessment was a first scoping exercise as it was based on a first review of the Member States' article 5 reports together with information provided by the Member States and stakeholders at the workshop. It :

- Provided a first overview of the results of the Article 5 risk assessments for hydromorphological pressures and impacts, and hence the overall scale of the problem across Europe;

- Identified the main causes of the hydromorphological pressures and impacts placing water bodies at risk of failing to achieve good status;
- Identified the number of provisional Heavily Modified water bodies and the water uses responsible for the modifications to their physical characteristics;
- Identified the criteria used by Member States for the purpose of assessing risks from hydromorphological alterations and for identifying provisional heavily modified water bodies;
- Identified key gaps in the scientific knowledge of the effects of hydromorphological pressures on ecological status.

This information was used to help develop the scope of, and prioritise, the follow up technical work on hydromorphological issues.

Main tasks

- Simplify the process of designation of HMW, within the context of the previous guidances, but with use of the experiences based on several case-studies;

- Identify any common principles and criteria (like the cost benefit analysis) relevant to risk assessments and restoration and mitigation measures;

- Integrate the objectives of conservation of protected areas;

- Improve understanding and knowledge of the interaction between hydro-morphology and biology;

- Make recommendations on or exemplify pragmatic approaches on assessment of hydromorphological pressures and impacts;

- Exchange information on the approaches Member States plan to use for the designation tests for heavily modified water bodies;

- Exchange information on relevant knowledge (including the links between hydromorphological conditions and biological status) and approaches Member States plan to use to refine their hydromorphological risks assessments to facilitate the design of their programmes of measures. Risk assessment criteria will inform the design of the restoration measures necessary to achieve good status;
- Exchange information on the restoration and mitigation measures Member States consider compatible with specific water uses, in particular hydropower generation, navigation and flood defence. This task should cover the restoration and mitigation measures considered appropriate in relation to existing uses and in relation to new uses permitted in accordance with Article 4.7;
- Exchange information on the typical effectiveness, costs and benefits of different restoration and mitigation measures;
- Exchange information on existing cooperation processes between the different authorities and stakeholders.

Deliverables
The expected outcome is a technical report based on the following main sections:

(a) A section on pragmatic approaches for the designation tests

(b) A Section on ***hydromorphological conditions supporting the achievement of good status***. Recommended subsections:

- Illustrative case study examples of the approaches being taken by Member States to:

  - Identify links between hydro-morphology and ecological quality elements of the WFD
  - Protect surface water bodies from hydromorphological deteriorations
  - Assessing alternative means and technologies to develop specific uses
  - Restore damaged hydro-morphological conditions
  - Integrate the perspectives of protected areas

- Any emerging common principles and criteria.

(b) A Section on *mitigation* ***measures for achieving good ecological potential***, which will set out:

- Illustrative case study examples of mitigation measures considered by Member States to be compatible with GEP and different water uses. The examples should cover mitigation measures relevant to existing modifications and those relevant to proposed new modifications to the physical characteristics of surface water bodies;
- Any emerging common principles and criteria on mitigation measures for the main water use activities, including in particular hydropower; navigation; and flood defence; and recommendations on future research priorities.

Lead

Germany and United Kingdom will lead this activity.

iv. Policy integration activity

Purpose

- To examine how water policy and other policies that can lead to hydromorphological pressures on surface water bodies interact;
- To make recommendations for better policy integration at the different levels and scales.

The initial focus of the activity will be on interactions between energy (hydropower), transport (navigation) and flood management policy and water policy.

Main tasks

The main tasks will be organised in two steps:

Step 1: Identification of the interactions between water policy and other policies (energy, navigation and flood management)

- Assessment of the current situation, future trends and expected policy developments; and
- Identification of the potential synergies and antagonisms between these policies.

The findings of this step will be illustrated with examples of synergies and antagonisms between the different policy areas.

Step 2: Suggestions for better policy integration at the different levels and scales

- Provide recommendations for further improvements of the relevant policies at the different levels and scales
- Develop approaches and strategies for the protection and/or restoration from hydromorphological deteriorations and mitigation measures
- Identify how best use can be made of the potential synergies between the different policies,
- Identify how potential antagonisms between the different policies can be prevented and where necessary managed;
- Identify how co-operation and co-ordination between the different relevant authorities and stakeholders can be improved;

Deliverables

The expected outcome is a policy paper which make recommendations on the integration of energy (hydropower) policy, transport (navigation) policy and flood management policy with water policy.

Lead

EC will lead this activity.

v. Links with other working groups

In order to avoid duplication of the resources, some tasks will be tackled by already established working groups. Their inputs will be directly integrated in the activity. Should the development of the activity lead to new questions, they will be addressed to the relevant working groups.

Working group “ecological status” (ECOSTAT)

The Prague workshop has stressed the need for some common principles and criteria to define a more practical way to relate measures to MEP and GEP. Support for this activity will be considered by ECOSTAT, regarding the practical consequences on its current work load. Preliminary findings from the workshop will be transferred to ECOSTAT.

Stakeholder meeting EU flood action programme

The stakeholder meeting will discuss the identified main causes of the hydromorphological pressures and impacts regarding flood risk management measures, to exchange information and share experiences on how to deal with them. It will identify flood management policies that will contribute to the implementation of the WFD’s programmes of measures.

WFD and agriculture

Though the main deliverables of the activity are targeted to other uses, the review of the Member States’ article 5 reports have shown that agriculture was amongst the main pressures on hydromorphological conditions, especially from water abstraction and land drainage. Thus, the Strategic Steering Group “WFD and agriculture” will take this into account when developing its work programme.

Activities under Working Group B

Contacts between the leaders of the 2 activities will be organised in order to clarify their respective inputs and outcomes.

vi. Organisation

Like for the "WFD and Agriculture" activity, a Strategic Steering Group will assist the leaders of the two activities. It will meet twice a year. The members will be experts designated by the interested MS and other Countries involved in the CIS process, stakeholders and environmental NGOs.

Specific workshops gathering the different interested MS and stakeholders will be organised in order to gather contributions and reactions to the different documents. The Prague workshop, organised in October 2005, was the first one.

Leaders will directly report the work progresses to the SCG and the Water Directors.

vii. Contact person/s

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viii. Timetable

All the deliverables are expected for the end of 2006, to be endorsed at the last 2006 Water Director's meeting.
Further developments could be implemented later in the frame of a new round of the CIS (2007-2008).