

# HMWB Workshop, 12-13 March 2009, Brussels

## Member State Questionnaire

### 1. Context

A workshop on Heavily Modified Water Bodies (HMWB) will be organised on 12-13 March 2009 in Brussels by Germany, UK and the European Commission in cooperation with the WFD CIS-ECOSTAT-group and the CIS-HYMO-activity.

The workshop aims to allow information exchange on the following topics:

- **Designation of HMWB:**  
Exchange of experiences on practical application of HMWB designation processes in Member States.
- **Establishing good ecological potential (GEP):**  
Exchange information on the practical application of both methods for deriving GEP (HMWB Guidance No 4 approach based on biological quality elements and the “Prague” approach based on mitigation measures – *see Annex*) and collect examples of results.  
Compare results of methods and discuss, if they are comparable and what are reasons of differences.
- **Objective setting and measures:**  
Collect and discuss experiences of Member States on objective setting for HMWB (including related issues like application of exemptions) and exchange information about planned mitigation measures.

A discussion document will be prepared for the workshop. In order to collect background information for the workshop discussion document, Member States are kindly asked to fill in the present questionnaire on water uses and parameters included in HMWB designation, methods for classification of HMWB and ways of objective setting for HMWB in Member States.

Please fill in *one questionnaire per Member State* and return to [elftheria.kampa@ecologic.eu](mailto:elftheria.kampa@ecologic.eu) at the latest by **16 January 2009**. Please do not hesitate to answer, even if you can only provide information on national RBD level.

### 2. General information

**Q2.1:** Name of Member State.

ROMANIA

**Q2.2:** Name and contact details of person to be contacted if any clarifications on the reply to this questionnaire are needed.

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### 3. HMWB designation

*Note: For each answer below rounded figures would be appropriate.*

**Q3.1: Please tell us about the proportion of each water category you have identified for designation as heavily modified by completing the two Tables below**

#### Number of HMWB

River*		Lake		Transitional water		Coastal water	
Total number of water bodies (including non-HMWBs)	Number to be designated	Total number of water bodies (including non-HMWBs)	Number to be designated	Total number of water bodies (including non-HMWBs)	Number to be designated	Total number of water bodies (including non-HMWBs)	Number to be designated
196	59	42	42	2	0	4	2
25 (artificial WBs)							

\* the figures refer to the water bodies from the river basins with catchment areas > 1.000 km<sup>2</sup> for the Romanian tributaries which are part of the Tisa River Basin and to the water bodies from the river basins with catchment areas > 4.000 km<sup>2</sup> of the other Romanian rivers

#### Length and area of HMWB

River*		Lake		Transitional water		Coastal water	
Total length of water bodies (including non-HMWBs) (Km)	Length of to be designated (Km)	Total area of water bodies (including non-HMWBs) (Km <sup>2</sup> )	Area to be designated (Km <sup>2</sup> )	Total area of water bodies (including non-HMWBs) (Km <sup>2</sup> )	Area to be designated (Km <sup>2</sup> )	Total area of water bodies (including non-HMWBs) (Km <sup>2</sup> )	Area to be designated (Km <sup>2</sup> )
9085	3074	1353	1353	781	0	572	97
405 (artificial WBs)							

\* the figures refer to the water bodies from the river basins with catchment areas > 1.000 km<sup>2</sup> for the Romanian tributaries which are part of the Tisa River Basin and to the water bodies from the river basins with catchment areas > 4.000 km<sup>2</sup> of the other Romanian rivers

**Q3.2: Please tell us about the water uses for which you have identified water bodies as heavily modified by completing the three Tables below**

*Note. If a water body has been designated for more than one use, please count each use.*

<b>Water use [Art.4(3)(a)]</b>	<b>Number of water bodies**</b>
Wider environment [Art.4(3)(a)(i)] *	47
Navigation, including port facilities, or recreation [Art.4(3)(a)(ii)]	12
- Navigation, including port facilities	5
- Recreation	7
Activities for the purposes of which water is stored [Art.4(3)(a)(iii)]	70
- Storage for drinking water supply	21
- Storage for power generation	43
- Storage for irrigation	12

Water regulation, flood protection, land drainage [Art.4(3)(a)(iv)]	Total	Urban land	Agricultural land
	69	46	58
- Water regulation	23	16	21
- Flood protection	55	37	47
- Land drainage	7	3	7

\* Please specify your definition of “wider environment”: Nature 2000 sites: Special Protected Areas under Birds Directive, Sites of Community Importance under Habitat Directive, social problems in case people might be affected by floods, Sanitary protection areas around water supply intakes

Description of each 'equally important sustainable human development activity' for which HMWB are to be designated [Art.4(3)(a)(v)]	Number of water bodies**
Water storage for industry	4

#### Multiple water uses of HMWB

Number of water bodies** designated for one use	Number of water bodies** designated for two uses	Number of water bodies** designated for three or more uses
30	30	29

\*\* the figures refer to the water bodies from the river basins with catchment areas > 1.000 km<sup>2</sup> for the Romanian tributaries which are part of the Tisa River Basin and to the water bodies from the river basins with catchment areas > 4.000 km<sup>2</sup> of the other Romanian rivers

**Q3.3: Please tell us about the criteria you used to decide if a water body was substantially changed in character for it to be considered for designation as heavily modified by completing the applicable Tables below**

Did you use <u>impact-related criteria</u> (e.g. length or area expected to be worse than good status or substantially changed in hydromorphology)? (yes/no)	Did you use <u>pressure-related criteria</u> (e.g. volume of water stored; height of dam)? (yes/no)	Did you use <u>use-related criteria</u> (e.g. number of people provided with drinking water; protection against particular flood return period; daily number of vessels)? (yes/no)	Did you use <u>other types of criteria</u> ? (yes/no)
			Combination of all (impact-related criteria, pressure-related criteria, use-related criteria)

If you used **impact-related criteria**, please complete the following Table

Water category	Description of impact-related criteria (e.g. length or area expected to be worse than good status)
River	
Lake	
Transitional water	
Coastal water	

If you used **pressure-related criteria**, please complete the following Table

Pressure	Description of pressure-related criteria (e.g. volume of water stored; height of dam)?
Impoundment	
Other hydromorphological alterations	
- Rivers	
- Lakes	
- Transitional waters	
- Coastal waters	

If you used **use-related criteria**, please complete the following Table

Water use	Description of use-related criteria (e.g. number of people provided with drinking water; protection against particular flood return period; daily number of vessels)
Wider environment [Art.4(3)(a)(i)]	
Navigation, including port facilities, or recreation [Art.4(3)(a)(ii)]	
- Navigation, including port facilities	
- Recreation	
Activities for the purposes of which water is stored [Art.4(3)(a)(iii)]	
- Storage for drinking water supply	
- Storage for power generation	
- Storage for irrigation	
Water regulation, flood protection, land drainage [Art.4(3)(a)(iv)]	
- Water regulation	
- Flood protection	
- Land drainage	

Wider environment [Art.4(3)(a)(i)]

Navigation, including port facilities, or recreation [Art.4(3)(a)(ii)]

- Navigation, including port facilities
- Recreation

Activities for the purposes of which water is stored [Art.4(3)(a)(iii)]

- Storage for drinking water supply
- Storage for power generation
- Storage for irrigation

Water regulation, flood protection, land drainage [Art.4(3)(a)(iv)]

- Water regulation
- Flood protection

- Land drainage

Equally important sustainable human development activity' [Art.4(3)(a)(v)]

If you used **other criteria**, please complete the following Table

Description of other criteria used to decide if water bodies are substantially changed in character to consider designation
<p>« clear cut situations » of Failure of Good Status Approved</p> <ul style="list-style-type: none"> <li>▪ Change of category : river to lake               <ul style="list-style-type: none"> <li>– impoundments &gt; 1 km in small an medium rivers (river basin surface &lt; 1000 km<sup>2</sup>)</li> <li>– impoundments &gt; 2km large rivers (river basin surface &gt; 1000 km<sup>2</sup>)</li> </ul> </li> <li>▪ Lenght of lentic regime/total water body lenght &gt; 50%</li> <li>▪ Intensive river bank fixation/canalisation &gt; 70% of river water body</li> <li>▪ Hydropeaking &gt;50% of river water body</li> <li>▪ High density of barriers in potamal rivers : the density of barriers ≥ 2/km;</li> <li>▪ Storage lakes (for hydropower, irrigation, drinking water, flood control, industry)</li> </ul>

**Q3.4: Please tell us about the criteria you used to decide if implementing a measure (e.g. a restoration measure to achieve good status or a mitigation measure aimed at improving the ecological potential of a water body) would have a significant adverse effect on use by completing the two Tables below**

Have you developed specific criteria on significant adverse effects on use to help prepare the draft river basin management plans?	
<u>Yes</u>	<u>no</u>
<u>X</u>	

**Have you identified pressure-specific criteria to help screen out measures which would have a significant adverse effect on use (e.g. reducing abstraction by > 50 %)?**  
(yes/no)

yes

**Have you identified measure-specific criteria to help screen out measures which would have a significant adverse effect on use (e.g. dismantling major dams)?**  
(yes/no)

yes

**Have you identified use-specific numeric criteria (e.g. % loss of energy generation) to help screen out measures which would have a significant adverse effect on use?**  
(yes/no)

yes

**Have you identified other types of criteria to help decide what constitutes a significant adverse effect on use?**  
(yes/no)

Water use	Examples of the principal criteria you used to decide if a measure or combination of measures would have a significant adverse effect on use
Wider environment [Art.4(3)(a)(i)]	flooding some urban areas increasing the level of groundwater losses of some wetlands environmental problems in the other sites Jobs reduction (with more than 2%/yr ) The measure would contradict other directives (e.g. habitats directive) or other cultural, historical and natural objectives from universal heritage

Navigation, including port facilities, or recreation [Art.4(3)(a)(ii)]

- Navigation, including port facilities	
- Recreation	no recreational activities
Activities for the purposes of which water is stored [Art.4(3)(a)(iii)]	
- Storage for drinking water supply	complete loss of use
- Storage for power generation	complete loss of use hydro-power reduction (with more than 30%/yr)
- Storage for irrigation	complete loss of use
Water regulation, flood protection, land drainage [Art.4(3)(a)(iv)]	
- Water regulation	Agricultural production reduction (with more than 30-50%/yr)
- Flood protection	no flood control Effects on populated areas by flooding (with more than 30%) Increasing of flood risk (damages increasing with more than 30%/yr)
- Land drainage	Agricultural production reduction (with more than 30-50%/yr)
Equally important sustainable human development activity' [Art.4(3)(a)(v)]	

**Q3.5: Please tell us about the other environmental options you considered to decide if the benefits of the use could be provided by a significantly better environmental option [Art. 4(3)(b)] by completing the Table below**

Water use	Other environmental options considered
Wider environment [Art.4(3)(a)(i)]	
Navigation, including port facilities, or recreation [Art.4(3)(a)(ii)]	
- Navigation, including port facilities	Road transport
- Recreation	Move to other water body Diminishment of recreation in some locations at a certain time
Activities for the purposes of which water is stored [Art.4(3)(a)(iii)]	
- Storage for drinking water supply	Groundwater supply Water supply from other river basin Diminishment of impact by compensatory and ecological discharges
- Storage for power generation	Thermo power generation Wind generation Diminishment of impact by compensatory and ecological discharges
- Storage for irrigation	Change of land use
Water regulation, flood protection, land drainage [Art.4(3)(a)(iv)]	
- Water regulation	
- Flood protection	Change of land use
- Land drainage	Change of land use
Equally important sustainable human development activity' [Art.4(3)(a)(v)]	

#### 4. Establishing Good Ecological Potential (GEP)

**Q4.1: Please tell us about the method you used to classify the ecological potential of heavily modified water bodies by completing the applicable Tables below**

Are you satisfied that your draft classification results reflect the effect of hydromorphological alterations on ecological potential ? (yes/no)

Have you classified the effect of hydromorphological alterations on ecological potential using biological assessment methods (according to CIS Guidance No. 4 – See Annex)? (yes/no)

Have you classified the effect of hydromorphological alterations on ecological potential by assessing whether all practicable mitigation measures have been taken (according to the Prague approach - See Annex)? (yes/no)

Have you developed another method of classifying the effect of hydromorphological alterations on ecological potential? (yes/no)

The method is under development	The method is under development, the approach consisting in using of biological assessment methods in classification of the effects of hydromorphological alterations on EP		
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**Have you adapted your existing biological assessment methods for application to heavily modified water bodies?**

The method for HMWBs classification is under development , being based mainly on expert judgment in estimating the biological references for closest comparable water body type and for the assumed situation prior to the hydromorphological alterations.

**Have you developed specific biological assessment methods for classifying HMWBs?**

(free text)

Please complete the Table below if you have classified the effect on ecological potential of hydromorphological alterations using biological assessment methods (according to CIS Guidance No. 4 – See Annex)

Water category	Were you able to derive biological references for maximum ecological potential? (yes/no)	What biological quality element (or elements) have you used to make these assessments?
Rivers	The method is under development	The following biological quality elements are used: <ul style="list-style-type: none"> <li>• macroinvertebrates</li> <li>• fish</li> </ul>

		<ul style="list-style-type: none"> <li>• macrophytes</li> </ul>
Lakes	The method is under development	The following biological quality elements are used: <ul style="list-style-type: none"> <li>• fish</li> <li>• phytoplankton</li> </ul>
Transitional waters	Not applicable	
Coastal waters	The method is under development	The following biological quality elements are used: <ul style="list-style-type: none"> <li>• phytoplankton</li> <li>• macroinvertebrates</li> </ul>

Please complete the Table below if you have classified the effect on ecological potential of hydromorphological alterations using the **mitigation measures approach** (according to the Prague approach - See Annex)

<b>Water use</b>	<b>Did you develop use-specific generic checklists of mitigation measures? (yes/no)</b>	<b>Did you identify water body-specific mitigation measures rather than generic checklists? (yes/no)</b>	<b>If applicable, did you modify the generic list to take account of the specific characteristics and use of each HMWB? (yes/no)</b>	<b>Did you involve the water users in applying the method? (yes/no)</b>
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Navigation,  
including port  
facilities  
Storage for  
drinking water  
supply  
Storage for  
power  
generation  
Storage for  
irrigation  
Water regulation  
Flood protection  
Land drainage  
Equally  
important  
sustainable  
human  
development  
activity'

**If you have developed generic checklists of measures, please describe these**

The generic checklist contains specific measures for morphological and hydrological pressures and the expected effects.

**Please specify if you have a special methodology for the definition of Maximum Ecological Potential (MEP), which differs from your GEP methodology**

(free text)

For Member States that have used both approaches of GEP establishment (Guidance No. 4 approach & “Prague” approach):

**Q4.3:** How do the results of using the two approaches compare? Are the mitigation measures needed to achieve good ecological potential comparable? Are there any examples to combine both methods?

(free text)

## 5. Exemptions for HMWB

**Q5.1:** Do you intend to apply Art. 4(4) exemptions (time derogation) to HMWB?

<u>yes</u>	<u>no</u>
<u>X</u>	

Do you intend to apply Art. 4(5) exemptions (less stringent objectives) to HMWB?

<u>yes</u>	<u>No</u>
<u>X</u>	

How did you combine this with HMWB designation according to Art. 4 (3) and CIS guidance No 4?

The measures will be analysed under the context of feasibility, costs proportionality and significantly better environmental options.

## 6. Suggestions for the workshop

**Q6.1:** Do you have any suggestions for the upcoming workshop on Heavily Modified Water Bodies (12-13 March 2009, Brussels)? E.g.

- Any questions proposed for discussion?
- Public participation ideas concerning HMWB?
- Any pilot projects, methods for presentations at the workshop?

- The correlation of reservoirs intercalibration exercise at European level with ecological potential by assessing using mitigation measures approach
- Presentation of case studies and their results
- Water storage for fish farming might be considered “equally important sustainable human development activity”?
- E.g. Problems encountered: Fish ladders - Romanian criteria  $H > 15$  m for not technical feasible.

If there is a barrier with **H > 15 m & migratory fish** on the river how do we follow the steps of HMWB test? **There is NO technical measure to assure longitudinal continuity!**

If there is a barrier with **H < 15 m & NO migratory fish** how do we follow the steps of HMWB test? **There is no reason to propose fish ladder for assure longitudinal continuity!**

Along the river there are barriers some with  $H > 15$  m other  $H < 15$  m how do we assure migration routes along the river?

**A barrier with  $H < 15$  m & migratory fish**

There are two possible measures to assure longitudinal continuity:

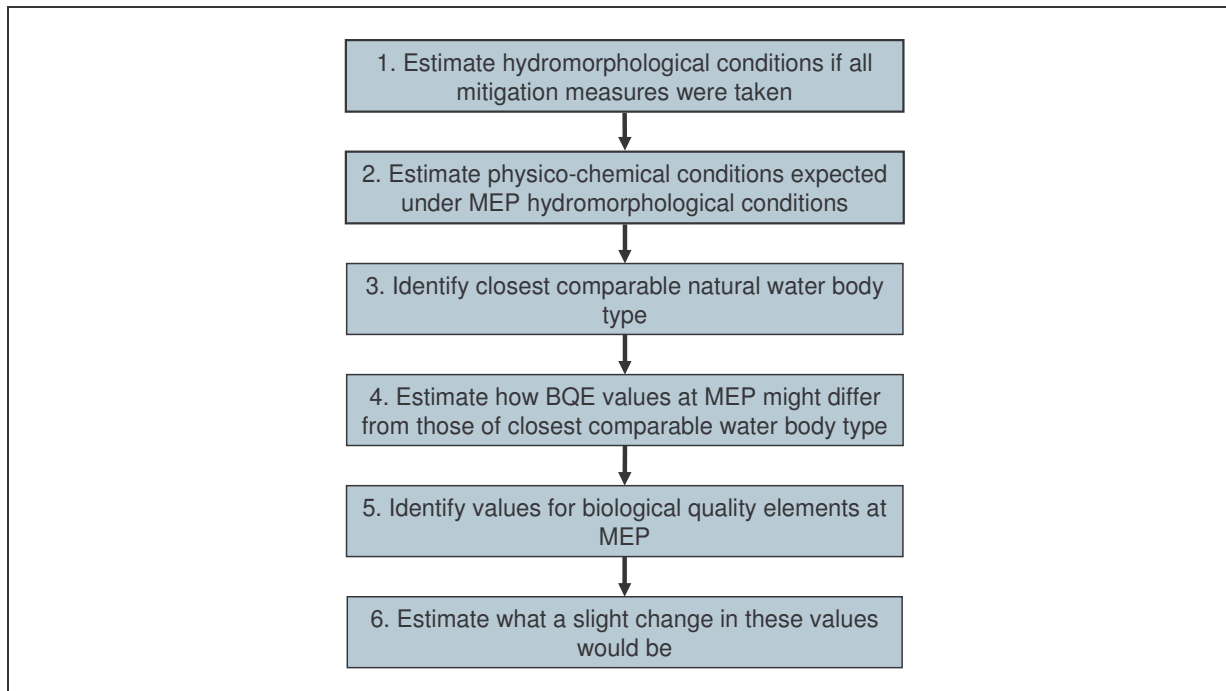
1. To remove the barrier leading to no solution for uses → **HMWB?**
2. To build a fish ladder → **NWB?**

Is it NWB or HMWB ?!? How do we decide? Economic analysis? Biological elements?

- The general opinion is that for a HMWB no measure should be taken. An example of **HYDRO-MORFOLOGICAL** measure for a HMWB?
- **CLARIFICATION:** The link between the sub-step within the HMWB test - These “other means” are NOT disproportionately costly done at the WB scale - and the economic analysis done at what scale !!? maybe the sub-basin scale?

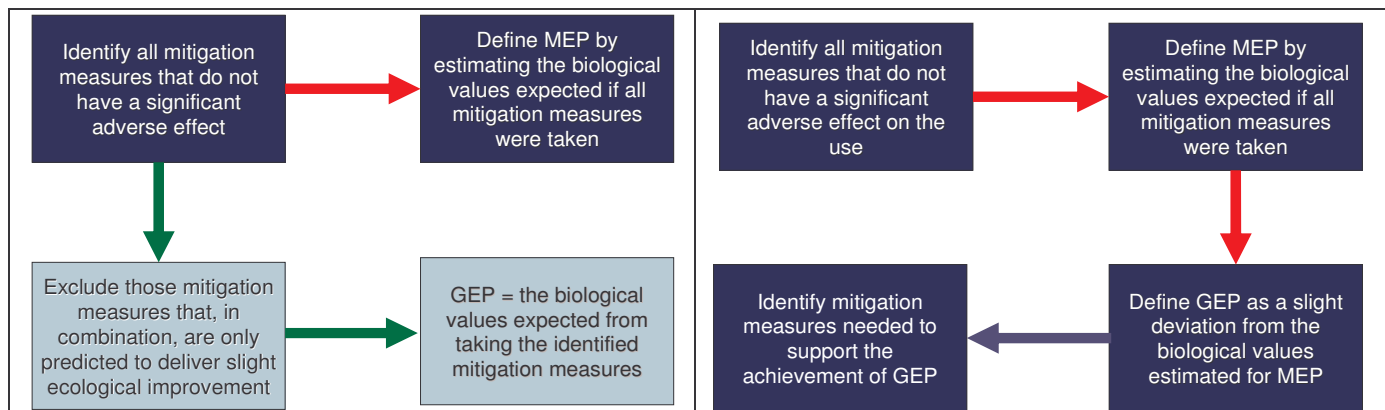
## **Annex: Additional background information on the establishment of Good Ecological Potential (GEP)**

- ✓ Good ecological potential is defined in the Annex V 1.2.5 to the Water Framework Directive as an ecological state in which “*there are slight changes in the values of the relevant biological quality elements as compared to the values found at maximum ecological potential*”.
- ✓ The values for the biological quality elements at MEP should reflect, “*as far as possible, those associated with the closest comparable surface water body type, given the physical conditions which result from the artificial or heavily modified characteristics of the water body*”. The definition recognises that the MEP biological values (a) depend on the MEP hydromorphological conditions and (b) may be different from those of the any natural surface water body type because no such natural type is completely comparable.
- ✓ The Directive defines the MEP hydromorphological conditions as those “*consistent with the only impacts on the surface water body being those resulting from the artificial or heavily modified characteristics of the water body once all mitigation measures have been taken to ensure the best approximation to ecological continuum, in particular with respect to migration of fauna and appropriate spawning and breeding grounds*”.
- ✓ The mitigation measures referred to in the definition of MEP hydromorphological conditions are limited to those that would not have a significant adverse effect on (a) the wider environment or (b) the use or uses that are dependent on the modified characteristics. The purpose of designation of a water body as a HMWB or AWB would be defeated if mitigation measures that would have such adverse effects were included.
- ✓ This also means that GEP cannot represent a state that could only be achieved using measures that would have a significant adverse effect on the wider environment or on the use or uses justifying designation in accordance with Article 4.3.
- ✓ GEP therefore represents a state in which the ecological potential of a water body is falling only slightly short of the maximum it could achieve without significant adverse effects on the wider environment or on the relevant water use or uses. An assessment of disproportionate costs of the mitigation measures should not be considered.
- ✓ In contrast, the definition of good ecological status is independent of any consideration of impact of the measures that may be needed to achieve it. Costs of these measures are also not considered.
- ✓ The generic steps relevant to defining GEP and described in the CIS Guidance Document No.4 can be summarised as in Figure 1 below.



**Figure 1:** Steps in defining GEP as described in the CIS Guidance Document No. 4.

- ✓ Technically the approach is complicated and highly reliant on good predictive modelling or expert judgement. Any errors in the estimates made in each of the steps will tend to sum. This compounding of errors could result in a definition of GEP that cannot be achieved without significant adverse effects on a relevant water use or that fails to reflect the level of ambition intended by the Directive.
- ✓ The alternative method described below defines GEP relevant to those biological quality elements and physico-chemical quality elements that are so affected by the heavily modified characteristics that they cannot achieve their GES values without measures being taken that would have a significant adverse effect on the wider environment or on a use of the water body that is reliant on the modifications. For other quality elements, their values at GEP are expected to be the same as their GES values prior to the hydromorphological modifications.
- ✓ Figure 2 summarises the main steps involved in the alternative approach to defining GEP (left side of Figure) and compares this with the main steps in the approach set out in CIS Guidance Document No. 4 (right side of Figure).



**Figure 2:** Steps involved in defining GEP using alternative approach (left side) compared to the relevant steps in the approach described in CIS Guidance Document No. 4 (right side); red arrows: steps following CIS method, green arrows: modifications of CIS method.

- ✓ Under both approaches the gap between MEP and GEP in ecological quality terms will be slight. Ecologically, GEP will represent the same level of ambition whichever of the two approaches is used.
- ✓ Nevertheless both approaches are still somewhat theoretical. Their advantages and disadvantages are yet to be demonstrated. Practical experience of defining GEP is currently very limited, the definition of GEP seems to be very complex. In the course of implementation, knowledge and understanding will increase enabling the further development and improvement of the approaches. Member States may also identify other alternative approaches.