

## Identification and development of the environmental objectives according with WFD. Overview on specific case studies



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## General overview. Legislative background

- ❑ The environmental objectives are defined in Article 4 of the Water Framework Directive (WFD). The aim is long-term sustainable water management based on a **high level of protection of the aquatic environment**.
- ❑ Article 4.1 defines the **WFD general objective** to be achieved in all surface and groundwater bodies, **i.e. good status by 2015**, and introduces the **principle of preventing any further deterioration of status**.
- ❑ There follow a number of **exemptions to the general objectives** that allow for less stringent objectives, extension of deadline beyond 2015, or the implementation of new projects, provided a set of conditions are fulfilled.



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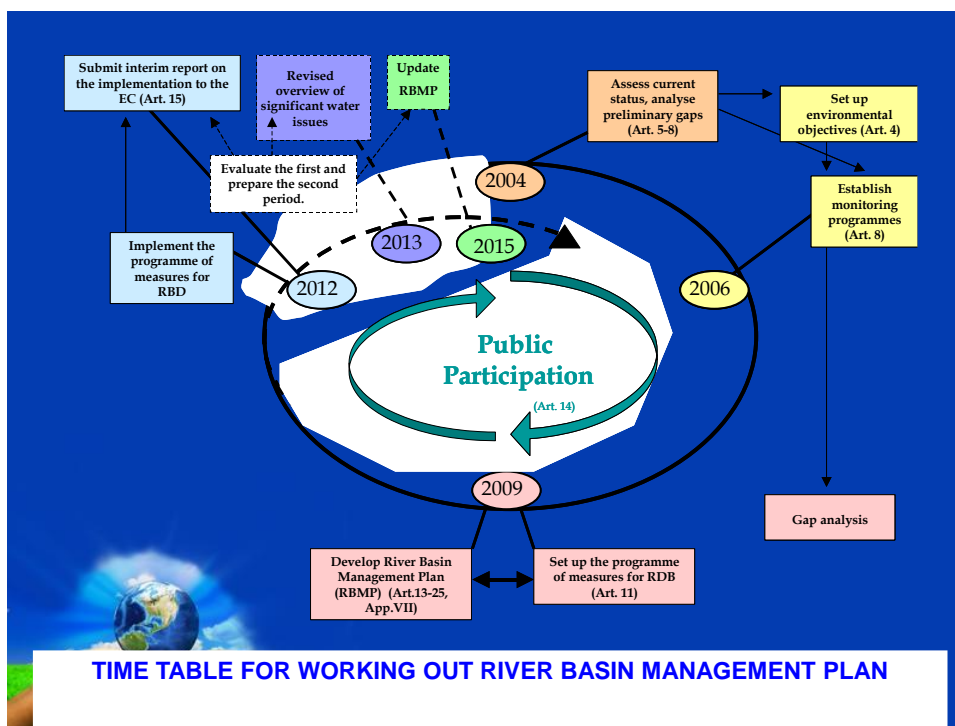
## Objectives defined in WFD for the PoM

**PoM** → fulfil the environmental objectives described in article 4 WFD:

- Preventing the further deterioration of bodies of water;
- Improving the status of bodies of water;
- Preventing pollution from hazardous substance sources;
- Achieving all of the norms and objectives related to protected areas



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## Key messages in setting environmental objectives

- ❑ Artificial and heavily modified water bodies do not constitute a conventional objective or exemption. They are a specific water bodies category – with its own classification scheme and objectives – which is related to the other exemptions in requiring certain socio-economic conditions to be met before it comes to play.
- ❑ The so-called “exemptions” are an integral part of the environmental objectives set out in Article 4 and the planning process.

## Key messages in setting environmental objectives

- ❑ The translation of the WFD's normative definitions into numeric class boundaries for environmental objective (i.e good status ) is driven by a **scientific-based approach**.
- ❑ *Socio-economic considerations are fully addressed through the integrated mechanisms provided by the WFD, namely through "exemptions" from achieving Article 4 objectives (e.g. no-deterioration and good status in 2015) and through cost-effectiveness analysis.*
- ❑ The WFD provides for environmental objectives which should be achieved by the most cost-effective combination of measures. Cost-effectiveness assessment and public participation of proposed choices are the key instruments in this process.

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## Key messages in setting environmental objectives

- ❑ The **objective setting and exemptions** should be used to **prioritize action in river basin plans and programme of measures** .
- ❑ The relationship between exemptions is not a hierarchy in the sense that some are easier to justify than others. However, **the conditions for setting "less stringent objectives" require more information and in-depth assessment of alternatives than those for extending the deadline**. Therefore, there should be a stepwise thinking process for considering what sort of exemption may be most appropriate
- ❑ "Less stringent objective" represents the nearest quality one can get to "good status" given the impacts that are either infeasible or disproportionately expensive to address.

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## Key messages in setting environmental objectives

- ❑ When applying exemptions, application of key terms and/or provisions in the exemptions needs to be done in an **open and transparent manner** in order to make the methodologies subject to consultation.
- ❑ A harmonized, comparable and transparent approach for the application of the “exemptions” and the cost-effectiveness assessment should be coordinated within river basin districts  
The appropriate scale of application of assessments may be different for different issues.
- ❑ The planning of “new modifications” requires the carrying out of an environmental impact assessment which demonstrates, at least, that the criteria and conditions of Article 4 §7, but also 4 §8 and 4 §9, are met.



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## Assessment and classification system for surface water bodies according to WFD

Ecological status  
(Rivers) →

### Biological elements

- Composition and abundance of aquatic flora
- Composition and abundance of benthic invertebrate fauna
- Composition, abundance and age structure of fish fauna



### Hydro morphological elements

#### Hydrological regime

- quantity and dynamics of water flow
- connection to ground water bodies

#### River continuity

#### Morphological conditions

- river depth and width variation
- structure and substrate of the river bed
- structure of the riparian zone

## Assessment and classification system for surface water bodies according to WFD

Ecological status  
(Rivers) →



### Chemical and physicochemical elements supporting the biological elements

#### General

- Thermal conditions
- Oxygenation conditions
- Salinity
- Acidification status
- Nutrient conditions

#### Specific Pollutants

- Pollution by all priority substances identified as being discharged into the body of water
- Pollution by other substances identified as being discharged in significant quantities into the body of water

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## Assessment and classification system for surface water bodies according to WFD

Ecological status  
(lakes) →



### Biological elements

- Composition, abundance and biomass of phytoplankton
- Composition and abundance of other aquatic flora

### Hydromorphological elements supporting the biological elements

#### Hydrological regime

- quantity and dynamics of water flow
- residence time
- connection to the ground water body

#### Morphological conditions

- lake depth variation
- quantity, structure and substrate of the lake bed
- structure of the lake shore

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## Assessment and classification system for surface water bodies according to WFD

### Ecological status (lakes)

Chemical and physico-chemical elements supporting the biological elements

#### General

- Transparency
- Thermal conditions
- Oxygenation conditions
- Salinity
- Acidification status
- Nutrient conditions

#### Specific pollutants

- Pollution by all priority substances identified as being discharged into the body of water
- Pollution by other substances identified as being discharged in significant quantities into the body of water

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## Assessment and classification system for surface water bodies according to WFD

### Heavily Modified Water Bodies Artificial water Bodies

The quality elements applicable to artificial and heavily modified surface water bodies shall be those applicable to whichever of the natural surface water categories above most closely resembles the heavily modified or artificial water body concerned.



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## Assessment and classification system for surface water bodies according to WFD

### Romanian approach – fish fauna

#### □ The assessment and classification system is based on EFI + Method

- 10.000 samples from most of EU countries;
- 254 fish species grouped on ecological criteria in 15 main categories
- the data was statistical assessed using the fish typology model



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## Assessment and classification system for surface water bodies according to WFD

### Romanian approach – fish fauna

Quality	Salmonicol Waters Types RO01, RO02, RO03 și RO17, RO18	Cyprinide Waters Types RO04 - RO15 și RO19
<u>Samples „on foot”</u>		<u>Samples by boat</u>
Very Good Status (Class 1)	0,912-1,000	0,940-1,000
Good Status (Class 2)	0,756-0,911	0,700-0,939
Moderate status (Class 3)	0,504-0,755	0,438-0,699
Bad status (Class 4)	0,253-0,503	0,219-0,437
Very bad status (Class 5)	0,000-0,252	0,000-0,218
		0,918-1,000
		0,563-0,917
		0,376-0,562
		0,188-0,375
		0,000-0,187



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## Assessment and classification system for surface water bodies according to WFD

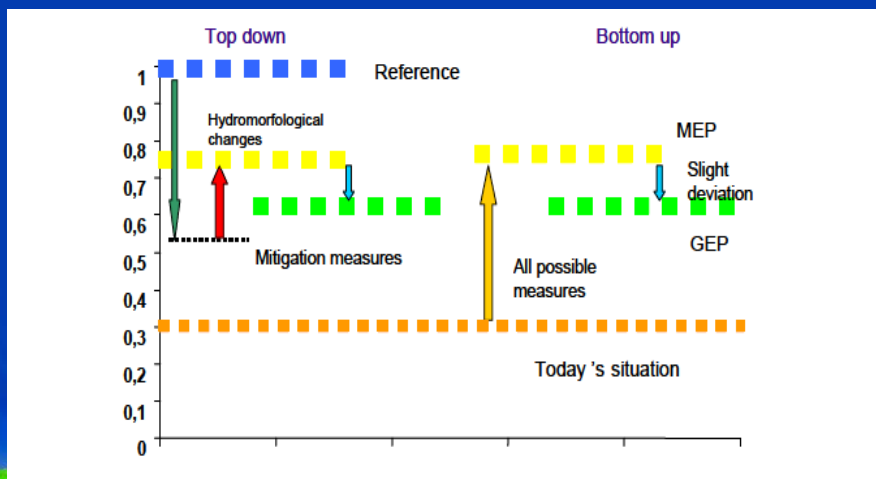
### Romanian approach – Maximum /Good ecological potential

- The ecological potential of the WB was defined in terms of MEP/GEP. The method of defining the MEP is based on the 'Guidance document on identification and designation of heavily modified and artificial water bodies' and latest developments and understandings in the conference of Heavily Modified Water Bodies in Prague in October 2005, depicted in Figure 15.
- Following the Prague method for defining the MEP/GEP, the starting point is the current situation instead of the reference conditions in the 'guidance-method'. The maximum ecological potential (MEP) is the ecological condition which will be reached after taking all possible measures.

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## Assessment and classification system for surface water bodies according to WFD

### Romanian approach – Maximum /Good ecological potential



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## Programme of Measures & Environmental Objectives

- Article 11 clearly states the need to build a programme of measures: *“Each member state shall ensure the establishment for each river basin district, or for a part of an international river basin district within its territory, of a **programme of measures, taking into account the results of the analysis required under article 5, in order to achieve the objectives established under article 4.**”*

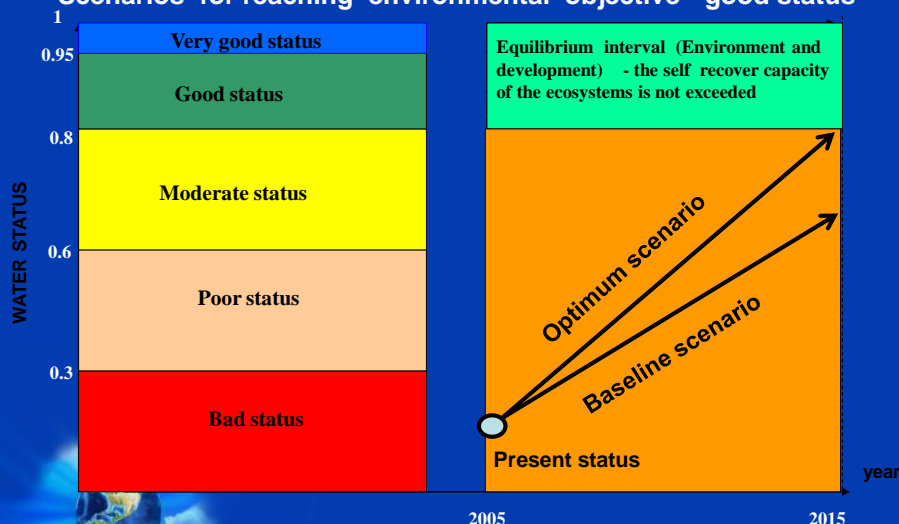
**! In this sense the PoM is a crucial tool for reaching environmental objectives.**



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## Objectives defined in WFD for the PoM

### Scenarios for reaching environmental objective - good status



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**THANK YOU !**



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