Implementation of the EU Water Framework Directive: Challenge and Experiences

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Implementation of WFD in the Netherlands

Living in a delta (more than 50% lower than sea level)

- Rhine
- Meuse
- Scheldt
- Ems
Distribution of the water of the rivers Rhine & Meuse in the Netherlands.
Objective WFD: A Good Chemical and Ecological status in all European waters in 2015.

River Basin Management Plan

RBMP
Route to RBMP

- Determination typologies and references
- Identification of the water bodies
- Designation of heavily modified and artificial water bodies
- Classification of the water bodies (status)
- Monitoring Programme
- Environmental objectives
- Programme of measures
- Economic analysis
- Public participation

Art. 5 Report
(characterization river basins)
2005

good status in 2015
classification of the status
(surface waters)

chemical status

European standards

“one out all out”

ecological status

Standards by EU Member States

high  good  moderate  poor  bad
classification of the ecological status
(surface waters)

Intercalibration
(Annex V, 1.4.1) → 2003-6 → Setting class boundaries

Characterisation and risk assessment
(Annex II) → 2004 → Type specific reference conditions Water bodies at risk

Monitoring programmes made operational
(Annex V) → 2006 → Surveillance Operational

First River Basin Management Plan
(Annex VII) → 2009 → Ecological classification of all surface water bodies

Poor and bad status defined by Member States

From: EU-Guidance REFCOND
assessment chemical status

- priority substances
- 76/464/EG substances

Art.4 (9) \(\rightarrow\) at least the same level of protection as the existing Community legislation

- Bathing Water Directive (76/160/EEC)
- Birds Directive (79/409/EEC)
- Drinking Water Directive (79/409/EEC)
- Nitrates Directive (91/676/EEC)
- Habitats Directive (92/43/EEC)
- Integrated Pollution Prevention Control Directive (96/61/EC)

When all water bodies would meet the requirements of these existing EU Directives, they would also (almost) reach the good chemical WFD-status.
assessment of the ecological status

- biological
  - reference conditions?
    - Yes: high status?
      - Yes: high status
      - No: only slight deviation?
        - Yes: EU-standards + ecosystem functioning?
          - Yes: good status
          - No: moderate deviation?
            - Yes: moderate status
            - No: major deviation?
              - Yes: poor status
              - No: bad status
    - No: biological quality elements prevail
  - only slight deviation?
    - Yes: high status?
      - No: greater
      - Yes: good status
    - No: moderate deviation?
      - Yes: moderate status
      - No: bad status
  - moderate deviation?
    - Yes: good status
    - No: bad status
  - major deviation?
    - Yes: poor status
    - No: bad status

- physico-chemical
- hydromorphological

quality elements
Monitoring

(Monitoring Programme is essential element of RBMP)

- representative overview of chemical and ecological status
- data for assessing compliance with standards and objectives
- “at risk” assessment
- data for assessment of the effectiveness of the measures

Design of monitoring programmes is an important strategic process
Implementation WFD in the Netherlands

7 sub river basins:
- Rhine (4)
- Meuse
- Scheldt
- Ems
surveillance monitoring network for the River Meuse

chemistry
Operational monitoring locations in the Meuse river basin district
River Basin Management Plan (RBMP)

- strategic plan (vision)
- relation with other strategies / plans (Natura 2000; Spatial Planning; Agriculture Policy, etc.)
- based on good knowledge of the (sub) river basin (characterisation) (which WBs “at risk”?) (overview of significant water management issues - 2007)
- clearly formulated targets to be reached (objectives))
- agreements on measures to meet the objectives (programme of measures)
- cost-effective sets of measures (cost effectiveness analysis)
- reliable data (monitoring)
- engagement of all relevant stakeholders (public participation)
river basin management plan

- OBJECTIVES
- PROGRAMME OF MEASURES
- COST-EFFECTIVENESS ANALYSIS
- MONITORING
- PUBLIC PARTICIPATION

→ How to organize?
→ Costs?
OBJECTIVES

WFD Art. 4:

- no deterioration of status for all water bodies
- achievement of good status by 2015 (GCT and GET/GEP)
- progressive reduction of pollution of priority substances and phase-out of priority hazardous substances
- compliance with any standards and objectives for the protected areas in Community legislation (as fas as relevant for WFD)

(+ good chemical and quantitative status of groundwater)
OBJECTIVES

- Member States determine objectives (within the agreed boundary conditions)
- Member States determine how to meet these objectives
- Extension of the deadlines or less stringent objectives (*exemptions*) are part of the decision-making process
- Decisions must be transparent and well argumented
Can good status be achieved by 2015?

- yes: Objective of good status by 2015
- no: except dependency on time scale of natural processes?
  - yes: Objective of good status as soon as natural conditions permit after 2015
  - no: Can good status be achieved by 2021?, except dependency on time scale of natural processes?
    - yes: Objective of good status by 2021, or as soon as natural conditions permit after 2021
    - no: Can good status be achieved by 2027?, except dependency on time scale of natural processes?
      - yes: Objective of good status by 2027, or as soon as natural conditions permit after 2027
      - no: Less stringent objectives
        - yes: Less stringent objective by 2015
        - no: Again review in 2015, 2021

From: EU-document “Environmental Objectives” (2005)
Route:
from References to Ecological Objectives

**Natural Water Bodies**

- **High Ecological Status**
  - HES (~ undisturbed)

- **Good Ecological Status**
  - GES (deviate only slightly from HES)

- Objective = GES
  - 2015
  - 2021
  - 2027
  → possibility of lower objective

**Heavily Modified and Artificial Water Bodies**

- **Maximum Ecological Potential**
  - MEP

- **Good Ecological Potential**
  - GEP (deviate only slightly from MEP)

- Objective = GEP
  - 2015
  - 2021
  - 2027
  → possibility of lower objective
Determination of MEP and GEP

Two methods:

- Determination from the reference conditions of the most comparable type of natural water body
- Determination from the present situation (“Prague method”)


Determination of MEP and GEP

→ determination from the reference conditions of the most comparable type for natural water bodies

natural situation (reference)

- irreversible hydromorphological interventions
- mitigation measures

MEP
- slight deviation
- extension of deadlines or less stringent objectives (exemptions)
- programme of measures
- 2015

GEP

present situation
Determination of MEP and GEP

Determination from present situation ("Prague method")

- MEP
- GEP

measures with low effectiveness
extension of deadlines or less stringent objectives (exemptions)

2015

present situation

total package of measures
### space for administrative decisions

<table>
<thead>
<tr>
<th>step</th>
<th>activities</th>
<th>administrative decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>identification water bodies</td>
<td>++</td>
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<tr>
<td>2</td>
<td>inventarisation morphological interventions</td>
<td>-</td>
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<td>3</td>
<td>effects of realized interventions and measures</td>
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<td>determination of irreversibility of hydromorphological interventions</td>
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<tr>
<td>5</td>
<td>MEP</td>
<td>++</td>
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<tr>
<td>6</td>
<td>GEP</td>
<td>+</td>
</tr>
<tr>
<td>7</td>
<td>checking present situation to GEP; attention points?</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>measures (to comply with GEP)</td>
<td>+++</td>
</tr>
<tr>
<td>9</td>
<td>extension of deadlines or less stringent objectives (exemptions)</td>
<td>++</td>
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PROGRAMME OF MEASURES

• Achieving of the **Good Status** (Art. 11) *(chemical and ecological)*

• The selected set of measures must be **cost-effective**

• Essential part of **RBMP** (2009)

• Operational in **2012**

• Good Status should be achieved in **2015** (2021, 2027, …)
PROGRAMME VAN MEASURES

• What are measures?
  • physical interventions
  • instruments: - legislative
    - financial
    - communicative

\{ to influence the behaviour of target groups \}
What should happen?

- make an overview of potential measures, which could solve the observed problems (per sector / policy theme)
- make combinations of measures (sets of measures) and check them on effectiveness
- calculate the costs of the sets of measures and check them on cost-effectiveness
- tuning with adjacent areas (optimize for the whole (sub) river basin district)
- planning, incl. extension of deadlines or less stringent objectives
## MAATREGELENTABEL

### Hoogtepunten bestrijdende situaties
- **Praktische maatregelen**
  - **Aquatijne ecologie**
  - **Terenologische ecologie**
- **Bestrijdingselementen**
  - zwammaten
  - Oxytetracyclines
  - Amoxicilline
  - EAAGK

### Mogelijke maatregelen

<table>
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<tr>
<th>Maatregel</th>
<th>Bijdrage oplossen bestrijding</th>
<th>% aanthol in bestrijding</th>
<th>Bestrijdingsdoel</th>
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<tr>
<td>1. Hoogtepunten bestrijdende situaties</td>
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</table>
checking sets of measures for cost-effectiveness

determination of the most cost-effective set of measures

NOT: look for the theoretically “ideal solution”

BUT: a process of weighing one set against another

\[ \downarrow \]

transparant decision-making process

\[ \cdot \] ecological effects
\[ \cdot \] socio-economic effects
\[ \cdot \] time period to achieve the objectives
\[ \cdot \] direct costs
\[ \cdot \] indirect costs for national public affairs

+ public participation
EXEMPTIONS  (extension of deadlines or less stringent objectives)

_technically not feasible or disproportional costs_

set of steps  (in NL: Syncera Report)

1. judgment of the situation

2. estimation of the present policy

3. exploration possibilities of additional policy
   - inventarisation additional measures
   - estimation of positive effects
   - can the objectives be achieved?
   - are the additional measures technically feasible?
   - are the costs of the additional measures realistic (costs/benefits)?

4. are “exemptions” appropriate?

5. are decisions well founded?
   (technical/scientific basis / demonstrate disproprtional costs / demonstrate what and how improvements have been made)
Drafting the River Basin Management Plans (RBMPs)

- KRW, Annex VII: elements in RBMP (sort of content)
- There exists no EU-Guidance “drafting RBMP”

- Some unity in the set-up of the RBMPs
- Significant differences in process
- Each EU-country is trying to find its way for drafting the RBMP
  *(political, institutional and cultural differences)*

- Comparable results
- Differences in the process
first impression

The Netherlands

• All relevant water management plans in the Netherlands will be developed simultaneously by all relevant authorities in order to compose the four national RBMPs (Rhine, Meuse, Scheldt, Ems)

• The RBMP will be ‘composed’ of relevant parts of different water management plans

• Part A will be added to part B, together they form the RBMP

• The four RBMPs will be part of the National Water Management Plan

• Course-to-fine strategy
The Netherlands

- Simultaneous development of water management plans at the various levels (national, regional)
- Coarse-to-fine strategy: policy document every December in National Parliament. The set of measures to be implemented comes more and more clear.
- Implementation WFD within existing Dutch planning system
Coordination structure in (sub)river basins

National water management plan

Water management plan for state waters

Provincial water management plans

Water management plans of Water boards

Municipal water plans

National policy

River Basin Management plans

Coordination

Ems

Scheldt

Rhine

Meuse
CONCLUSIONS
River Basin Management Plans (RBMPs)

➡ RBMP is the final stage of a **strategic process** of 9 years (2000 – 2009)

➡ In between many **important choices** have been made

➡ RBMP relates to a **time frame** of 18 years: 2009 – 2027

➡ “extension of deadlines or less stringent objectives” is not a exception, but an essential part of the process to meet the WFD-objectives (only when there are good arguments!)

➡ “**Transparant decision making**” is the keystone of a RBMP