Introducing the main aspects of the Water Framework Directive

state of affairs and recent development

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Hungary
What’s WFD for?

DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy
Framework to integrate

Water policy: all in one directive
Sustainable development
Integration of several policies
Key aims of WFD

• expanding the scope of water protection to all waters, surface waters and groundwater
• achieving "good status" for all waters by a set deadline (2015, 2021, 2027)
• integrated water management based on river basins
• combined approach of emission limit values and quality standards
• getting the prices right
• getting the citizen involved more closely
• streamlining legislation
Environmental objectives of the WFD

• Good status for all waters by 2015
  – good ecological status/potencial
    • good biological status
    • good hydro-morphological status
    • good chemical status
  – good chemical status (toxic substances)
  – good quantity status
  – good chemical status
  – good status of protected areas
The purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which (a) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems.
River Basin Management Cycle

Submit interim report on the implementation to the EC (Art. 15)

Revised overview of significant water issues

Update RBMP

Assess current status, analyse preliminary gaps (Art. 5-8)

Set up environmental objectives (Art. 4)

Establish monitoring programmes (Art. 8)

2004

2013

2015

2006

Implement the programme of measures for RBD

Evaluate the first and prepare the second period.

Public Participation

(Art. 14)


Set up the programme of measures for RDB (Art. 11)

2009

2012


1st. characterisation

status assessment 2008

GWBS at risk 2015

list of exemptions 2015

2nd characterisation

GWBS at risk 2021

status assessment 2014

list of exemptions 2021

Midterm review

2nd RBMP
Content of the RBMP of Hungary

1. general characteristics
2. pressures and impact of human activity
3. protected areas
4. monitoring networks and programmes
5. status of waters and significant water management issues
6. environmental objectives
7. economic analysis of water use
8. programme of measures
9. register of other programmes and plans
10. public information and consultation
The Danube River Basin District and Hungary
ECONOMIC ANALYSIS
- Forecast
- Cost benefit analysis
- Impact of human activity
- Disproportionately expensive measures

MONITORING
- Surveillance monitoring
- Human activities
- Operative monitoring

STATUS ASSESSMENT
- Water management problems
- Social demands
- Supplementary assessments
- Impacts of measures

MANAGEMENT PLANNING
- Water bodies
- Possible Environmental objectives
- Possible measures
- Cost Benefit Analysis
- Environmental objectives
- Public Participation
- Water management problems, Possible Environmental objectives
- Possible measures
- River Basin Management Plan

RBMP

Flow chart of River Basin Management Planning Process
The Danube RBMP by ICPDR half year earlier than national
Water Bodies
Surface WBs / Groundwater WBs

Planning units (42)

Sub-basins
Duna, Tisza, Dráva, Balaton

Hungary

International cooperation

Public Participation

DUNA

Structure of the Planning

International cooperation

7 neighbors country

Public Participation
Water Bodies

Surface Water Bodies – 1082
(river like: 869 + lake: 213)
– River WB – natural 366 (25 types)
– Lake WB – natural 69 (16 types)
– Heavily Modified WB – 372
(river like: 357 + lake like: 15)
– Artificial WB – 275
(river like: 146 + lake like: 129)

Groundwater Bodies – 185 (7 types)
Protected Areas

Drinking water abstractions
Surface water abstraction: 15
Groundwater abstraction: 1740

Economically significant aquatic species
7 rivers (10 SWBs)
Bathing waters: 256 (river: 26, lake 230)

Nutrient-sensitive and nitrate vulnerable
46% of the country

Protected habitats and species
in relation with more than 90% of the WBs as
surface or groundwater dependent ecosystems
Establishment of WFD monitoring programme by the end of 2006

- Surface water monitoring program
- Groundwater monitoring program
- Protected areas monitoring programs
- Surveillance monitoring,
- Operational monitoring, and
- Investigative monitoring
Result of status assessment

River water bodies

Lake water bodies

Groundwater bodies

- River water bodies:
  - Poor: 10%
  - Fair: 11%
  - Good: 4%
  - Excellent: 2%
  - Poor to excellent: 71%

- Lake water bodies:
  - Poor: 32.34%
  - Fair: 5.18%
  - Good: 23.25%
  - Excellent: 30.96%
  - No data: 8.29%

- Groundwater bodies:
  - Poor: 30.16%
  - Fair: 38.21%
  - Good: 8.4%
  - Excellent: 59%
  - Poor to excellent: 23.25%
Natura2000 sites and national protected areas


456 impaired (less than good status) due to status of waters, 60% of the nature protected areas

? Why we have so much impaired PA ?

Measures for protected areas
Environmental Objectives – Groundwater Bodies

Achieve good status

- Prevent deterioration until 2015 (1%)
- Until 2021 (8%)
- Until 2027 (12%)
- After 2027 (10%)
- Less stringent objective (1%)

68% of the groundwater bodies currently have a good status.
Programmes of measures on…

• National level (administrative solutions)
  1. Legislation
  2. Revision of environmental and water licencing, EIA
  3. Re-enforcing of state administration controlling
  4. Development of WFD compatible monitoring network
  5. Informatics issues (e.g. databases)
  6. Measures for cost recovery
  7. Capacity building, mind changing
  8. Transnational cooperation for transboundary water issues

• Local level (technical solutions)
  1. Decreasing of organic and nutrient contamination
  2. Eliminating of other (heavy metals, synthetics) contam.
  3. Amending measures for HYMO status of RWB & LWB
  4. Sustainable water uses for quantitative protection of WB’s
  5. Measures for good drinking water quality
  6. Special measures for habitats and other protected areas
## Planned measures

<table>
<thead>
<tr>
<th>Type of Measures</th>
<th>Measures</th>
<th>% of the occurrence</th>
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</thead>
<tbody>
<tr>
<td>Measures to reduce the nutrient and the organic material load</td>
<td>1347</td>
<td>52%</td>
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<tr>
<td>Measures for reducing other pollutions</td>
<td>15</td>
<td>1%</td>
</tr>
<tr>
<td>Measures for improving of the hydro-morphological condition of rivers and lakes</td>
<td>968</td>
<td>37%</td>
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<tr>
<td>Implementation of the sustainable water use, improving of the water quantity condition</td>
<td>191</td>
<td>7%</td>
</tr>
<tr>
<td>Unique measures regarding to the wetlands and protected areas</td>
<td>91</td>
<td>3%</td>
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<tr>
<td>Total number of measures :</td>
<td>2614</td>
<td>100%</td>
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</table>
Implementation of measures for HU WB’s

Prevent deterioration till 2015 2015-21 2021-27
Rivers Lakes Groundwater

Jelenlegi jó állapot vagy potenciál fenntartása 2015-ig 2015-2021 2021-2027
Vízfolyás Állóviz Felszín alatti víz
Reduction of nutrient and organic material load

**Agricultural subsidies (under CAP):** 488 milliard HUF

**Modernisation of farms (manure storage):**
841 farms; 163,3 milliard HUF

**Agri-environmental payments:**
13 253 farms; 1,114 million ha; 276 milliard HUF

Other like: first afforestation, installation of grass lands/hedge, use of farm advisory services, etc.

**Structural Funds (under ERDF):** 510 milliard HUF

Sewage collection or investment on urban runoff and development of wastewater treatment plants:
580 projects
Buffer strips along the rivers, lakes to retain nutrients

Measure starts at 01/01/2012

Intensive agriculture in 2009
Fish passes for migration
Less hydro-morphological alterations, rehabilitation measures

239 projects
188 milliard HUF
2/3 WFD compatible
„The aim of the reconstruction is to improve river maintenance and regulate environment.”

Before and after reconstruction

Spent on 1,2 milliard HUF
RSD branch complex water protection project

- Eliminating emission sources
  - transfer WWTP outlet of BP
  - in riparian zone WW collection, treatment and transfer

- Improving hydro-morphology
  - sluice reconstruction
  - dredging

- New multifunctional outlet structure
- Eliminating pollutants from riparian zone
- Slurry reservoir areas
- Reconstruction of the Tass sluice
- Reconstruction of the Kvassay sluice
- Slurry reservoir areas
- Sediment dredging
Project objective: Slow down man-made acceleration of succession
Water quality problems in Lake Balaton

- First reports about deteriorating water quality in the 1920’s;
- Algal blooms starting from the 1940’s;
- The situation became critical in the 1960’s;
- Comprehensive plans since the beginning of the 1970’s;
- 1976. idea of the Kis-Balaton water protection system;
- Implementation since 1981.
Changes of trophic state in space and time

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<tbody>
<tr>
<td>Medencék</td>
<td>Keszthelyi ↔ Szigligeti ↔ Szemesi ↔ Siófoki</td>
<td>Keszthelyi ↔ Szigligeti ↔ Szemesi ↔ Siófoki</td>
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Improvement is slow, incomplete and unstable!
Algal concentration in August 2009 (Keszthely basin): >50 µg/l Chl-a ['eutrophic' according to OECD classification]
Measures to improve the water quality of Lake Balaton

- Introduction of phosphate-free detergents;
- Prohibition of intensive animal farming on the catchment;
- Deployment of sediment traps on the entering creeks;
- Dissemination of the proper agricultural (‘best management’) practice:
  a) measures to reduce erosion,
  b) reduction of fertilizer usage;
- Reducing the internal nutrient load (thin-layer dredging);
- Effectively eliminating the communal wastewater inlets:
  a) diverting the treated wastewater effluents off the catchment;
  b) implementing nutrient removal on the Zala catchment.
Historical extent of Lake Balaton
Kis-Balaton-II wetland restauration
What does it cost?

<table>
<thead>
<tr>
<th>Activities</th>
<th>Total project cost (A)</th>
<th>Euro</th>
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</thead>
<tbody>
<tr>
<td>Design costs</td>
<td></td>
<td>546 064</td>
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<tr>
<td>Land costs</td>
<td></td>
<td>1 392 965</td>
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<tr>
<td>Construction</td>
<td></td>
<td>14 291 157</td>
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<tr>
<td>Machinery and other equipment</td>
<td></td>
<td>1 441 541</td>
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<tr>
<td>Unforeseen extra costs</td>
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<td>536 013</td>
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<tr>
<td>Price correction (if necessary)</td>
<td></td>
<td>1 348 297</td>
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<tr>
<td>Technical support</td>
<td></td>
<td>1 014 908</td>
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<tr>
<td>PR</td>
<td></td>
<td>100 503</td>
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<tr>
<td>Supervision during construction</td>
<td></td>
<td>530 429</td>
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<tr>
<td><strong>SUBTOTAL</strong></td>
<td><strong>21 201 876</strong></td>
<td></td>
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<tr>
<td><strong>VAT</strong></td>
<td><strong>5 239 330</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>26 441 206</strong></td>
<td></td>
</tr>
</tbody>
</table>
Thank you for your attention!

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