WFD compliant Monitoring in Austria
Organisation and role of monitoring actors

Karin Deutsch/BMLFUW-VII 1
karin.deutsch@lebensministerium.at
Water monitoring in Austria (1)

Austrian national surface water monitoring before WFD

- since 1991
- Surface water:
  - 285 permanent sites in running water
  - site selection – main purpose monitoring chemical pollution
- Ground water:
  - ~ 2000 permanent sites
  - Representative overview
Water monitoring in Austria (2)

WFD adaption - since 2007:

- **Surface water**
  - large changes in system
  - Ecological / Chemical Status: new methods, type-specific
  - Definition Surveillance Monitoring - few permanent sites
  - Operative Monitoring:
    - based on Risk analysis
    - flexible not permanent
    - Emphasis: Monitoring Hydromorphological Pressure
    - Monitoring programme change every 3 years

- **Ground water**
  - +/- the same as before 2007
Legal foundations

- Water Framework Directive
- Austrian Water Act
- Gewässerzustandsüberwachungsverordnung (GZÜV) 
  (Ordinance on the Monitoring of the Status of Waters)
  → regulates Surveillance Monitoring and Operational Monitoring
  → Criteria for site selection, monitoring methods and frequencies
- Investigative Monitoring:
  Responsibility of 9 provinces
Structure of monitoring network

**Surveillance Monitoring:**
- Ü1: sites with high relevance
- Ü2: reference sites
- Ü3: additional sites

*selection of sites integrated in international networks (TNMN)*

**Operational Monitoring:**
- WB with risk (chemical / hydromorphological assessment of measures)
- International obligations

**Investigative Monitoring**

*regulated by ministry (BMLFUW)*

*regulated by provinces*

*overlaps*
Surveillance Monitoring - Surface Water

- Permanent monitoring network
- Mostly existing monitoring sites (data since 1992)
- 3 different types of monitoring sites:
  - Ü1: sites with high relevance
  - Ü2: reference sites
  - Ü3: additional sites

<table>
<thead>
<tr>
<th></th>
<th>Ü1</th>
<th>Ü2</th>
<th>Ü3</th>
</tr>
</thead>
<tbody>
<tr>
<td>rivers</td>
<td>31</td>
<td>5</td>
<td>40</td>
</tr>
</tbody>
</table>

- Parameters based on WFD
Messnetz - Überblicksweise Überwachung

Legende
- Überblicksmessstelle - Ü1
- Überblicksmessstelle - Ü2
- Überblicksmessstelle - Ü3
Operational Monitoring – Surface Water

- Non-permanent monitoring network
- 3 different types of monitoring sites:
  - sites with high risk (chemical / hydromorphological)
  - sites for assessment of measures (after measures)
  - international obligations

**Sampling frequency and duration**

- Frequency depends on method:
  - chemical and physical: 12 p.a.
  - biological QE: 1 p.a.

- Duration:
  - 1 – 2 years depending on parameter
### Operational Monitoring

#### sampling method – most indicative quality element

<table>
<thead>
<tr>
<th>Quality elements:</th>
<th>Fundamental Physical and chemical Parameters</th>
<th>Pollutants</th>
<th>Phyto-benthos</th>
<th>Makrophytes</th>
<th>MZB</th>
<th>Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressures:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical pressures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nutrients</td>
<td>x</td>
<td></td>
<td>x</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
</tr>
<tr>
<td>oxygen conditions</td>
<td>x</td>
<td></td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>temperature</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>salinisation</td>
<td>x</td>
<td>(x)</td>
<td>(x)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>acidification</td>
<td>x</td>
<td>(x)</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pollutants</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hydromorphological pressures:**

- Morphological modifications:
  - only modification of stream bed
    - residual flow: (x) x
    - hydro peaking: (x) (x) x
    - impoundment: (x) x (x)
    - interruption of continuum: (x) x

---

WS Monitoring Plovdiv 2013 – WFD compliant Monitoring in Austria
**Operational Monitoring/Running Waters**

<table>
<thead>
<tr>
<th>Year</th>
<th>Operation Überwachung in FG – Messstellenanzahl</th>
<th>In OWK mit Risiko Hydromorphologie</th>
<th>In OWK mit Risiko stofflich</th>
<th>davon Schadstoffe</th>
<th>Gesamtanzahl</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2009</td>
<td></td>
<td>458</td>
<td>114</td>
<td>42</td>
<td>572</td>
</tr>
<tr>
<td>2010-2012</td>
<td></td>
<td>1051</td>
<td>201</td>
<td>22</td>
<td>1252</td>
</tr>
<tr>
<td>2013-2015</td>
<td></td>
<td>ca. 450</td>
<td>163</td>
<td>21</td>
<td>ca. 613</td>
</tr>
<tr>
<td>2007-2015</td>
<td></td>
<td>ca. 1960</td>
<td>478</td>
<td>85</td>
<td>ca. 2440</td>
</tr>
</tbody>
</table>
Operatives Messnetz - Oberflächengewässer Stofflich 2007 - 2012

Operativ stoffliche Messstellen
- Ausschreibungszeitraum 2007 - 2009
- Ausschreibungszeitraum 2010 - 2012

Gewässernetz
- Fluss (Einzugsgebiet > 100 km²)
- See (> 0,5 km²)

Operatives Messnetz - Oberflächengewässer Hydromorph 2007 - 2012

Operativ hydromorphe Messstellen
- Ausschreibungszeitraum 2007 - 2009
- Ausschreibungszeitraum 2010 - 2012

Gewässernetz
- Fluss (Einzugsgebiet > 100 km²)
- See (> 0,5 km²)
GZÜV - Groundwater
Questions:

• Q 1: Who does what in monitoring (actors, roles and responsibilities?)

• Q2: Participatory tools for collection of information on aquatic environment?

• Q3: What are the sources of funding for monitoring and their respective shares?
Q 1: Who does what in monitoring (actors, roles and responsibilities?)

- Surveillance Monitoring
- Operational Monitoring
- Investigative Monitoring

**Responsibility:**
Federal Ministry of Agriculture, Forestry, Environment, Water Management (BMLFUW) and Offices of the 9 Provincial Governments

**Responsibility:**
9 Provinces
Surveillance and Operational Monitoring/1

- **Legal basis**: Water Act
- **Ordinance on the Monitoring of the Status of Waters**
- **Ministry of Agriculture and Forestry, Environment and Water Management (BMLFUW), Div. VII 1**
- **Offices of the 9 Provincial Governments**
- **Offices of the Provincial Governments**
  - **public tenders for sampling and analysis**
- **Laboratories sampling and analysis**
- **Selection of operational monitoring sites**
- **Submission of a proposal concerning the awarding of a contract by the Provinces, approval by the BMLFUW**
- **Participation in quality assurance programmes mandatory**

- **Coordination at federal level**
- **Coordination at provincial level**
- **Awarding of contracts for these services**
- **Performance of services**
Surveillance and Operational Monitoring/Aactors

Public authorities

- Coordination
- Evaluation/interpretation of data
- Storage/coordination of data
- Publication

Private

- Sampling and Analysis
Q2: Participatory tools for collection of information on aquatic environment (1)

Use of Monitoring data (1)

- WFD - Status assessment and starting of measures
  - no use of participatory tools
  - essential need to get
    - data of high quality (AQC!)
    - data based on standardised methods
    - transparent assessment
  - implementation of a Monitoring Network based on legal basis (GZÜV)
  - Status assessment mostly based on governmental monitoring networks (GZÜV-Operational Monitoring Sites) or additional monitoring networks run by the Provincial Government
Q2: Participatory tools for collection of information on aquatic environment (2)

GZÜV/Surveillance and Operational Monitoring Data are “Environmental Data” and public!

→ Data: WISA-Homepage
http://wisa.lebensministerium.at/h2o

→ Reports: Wassergüte in Österreich
http://wisa.lebensministerium.at/article/articleview/92037/1/13193
Q2: Participatory tools for collection of information on aquatic environment (3)

Use of Monitoring data (2)

- WFD – Risk analysis (Art 5 WFD) of water bodies
  - use of public and private data for assessing the likelihood that surface water bodies will fail to meet environmental quality objectives
  - e.g. Inventory of emissions of WTP, data for getting consent, scientific data

→ Inventory of emissions of WTP works +/- as participatory website
  - the WTP upload their emissions data,
  - evaluation and control by Provincial Government/BMLFUW
  - Based on Ordinance on Inventory of point source emissions

- Local river authority → reporting local accidents, faecal pollution ….
Q3: What are the sources of funding for monitoring and their respective shares?

WFD compliant monitoring is paid by Public funds. Water Act § 143 b regulates shares.

<table>
<thead>
<tr>
<th>Operative and surveillance Monitoring</th>
<th>Investigative Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of sampling sites</td>
<td>100 % Provincial Governments</td>
</tr>
<tr>
<td>100 % BMLFUW</td>
<td></td>
</tr>
<tr>
<td>sampling and analysis</td>
<td></td>
</tr>
<tr>
<td>2/3 BMLFUW,</td>
<td></td>
</tr>
<tr>
<td>1/3 Provincial Governments</td>
<td></td>
</tr>
<tr>
<td>Data storage</td>
<td></td>
</tr>
<tr>
<td>100 % BMLFUW</td>
<td></td>
</tr>
</tbody>
</table>
Q3: What are the sources of funding for monitoring and their respective shares (2)?

GZÜV – Surveillance and Operative Monitoring
Cost 2007 – 2012: Surface and Groundwater

<table>
<thead>
<tr>
<th>Year</th>
<th>Surface water</th>
<th>Groundwater</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2009</td>
<td>€ 3.300.000,00</td>
<td>€ 2.700.000,00</td>
</tr>
<tr>
<td>2010-2012</td>
<td>€ 2.800.000,00</td>
<td>€ 1.800.000,00</td>
</tr>
<tr>
<td></td>
<td><strong>€ 6.100.000,00</strong></td>
<td><strong>€ 4.500.000,00</strong></td>
</tr>
</tbody>
</table>
Thank you for your attention!