Flood and drought protection in the Czech Republic

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Planning process and implementation of WFD in the Czech R.

- 3 national parts of the international river basins
- 8 River basin districts (in the first cycle of the River Basin Management Plans)
Main issues of WFD and follow up EU legislative

Water quality, aquatic ecosystems...

Droughts

Floods

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

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL
Addressing the challenge of water scarcity and droughts in the European Union

DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2007
on the assessment and management of flood risks
(Text with EEA relevance)
Main issues of WFD

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DIRECTIVES

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(Text with EEA relevance)
Drought management issue

Elbe River in Ústí nad Labem, August 2003

COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 18.7.2007
COM(2007) 414 final

COMMUNICATION FROM THE COMMISSION
TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Addressing the challenge of water scarcity and droughts in the European Union

{SEC(2007) 993}
{SEC(2007) 996}

Source: UNEP
Issue of adaptation to climate change

Adaptation

WHITE PAPER

Adapting to climate change: Towards a European framework for action

COMMON IMPLEMENTATION STRATEGY FOR THE WATER FRAMEWORK DIRECTIVE (2000/60/EC)

Guidance document No. 24
RIVER BASIN MANAGEMENT IN A CHANGING CLIMATE

Economic Commission for Europe
Convention on the Protection and Use of Transboundary Watercourses and International Lakes

UNITED NATIONS
1949-1953 State Water Management Plan of the Czechoslovak Republic
Water resources inventory, concept of public water supply, estimates of water supply and demand for the future, water courses regulation

1975 Master Water Management Plan
Areas suitable for future surface water accumulation – background documentation to the General Plan for Surface Water Accumulation, groundwater resources estimation, water management balance assessment, possibilities of water ways improvements, proposal of new profiles suitable to hydropower generation…

2000 Strategy for protection against floods in the Czech Republic
drafted after floods in 1997 and 1998 together with flood forecasting and warning system, embedded in Water act in 2001
Review of the water management planning process

2007 The Plan of Main River Basins of the Czech Republic

Harmonization of public interests – protection of water as a component of the environment, flood protection, sustainable use of water resources
2009 River Basin District Plans
Prepared according to the WFD

New approaches applied in planning process:

- Water quality and quantity protection within a river basin or a hydrogeological zone
- Principle of recovery of the costs – polluter should pay
- Public participation process
- Transboundary cooperation

Activities to support adaptation process in the Czech Rep.

1. Modeling of climate change impacts on surface water resources
2. Review of the General Plan for Surface Water Accumulation
3. Guidelines for Adaptation Measures Proposal
5. National Adaptation Strategy
Modeling of Climate change impacts on surface water resources

Input data affected by climate change scenarios

Results for one of the scenarios used for an analysis of the Vltava river basin district

Simulation model of the Vltava river basin

Decrease in mean river flow at water gauging station [%]
- 0 - 15
- 15 - 30
- 30 - 45
- Over 45
A list of areas with suitable morphological, hydrological and geological conditions for a possible future surface water storage

After discussion among a group of experts 69 localities were selected for ongoing protection.

Decision made according to the results of climate change impact modeling.

Low conflicts with the environmental protection.
A research of adaptation measures to minimise climate change impacts on water resources in the Czech Rep.

The aim – to define guidelines for proposal of adaptation measures on water resources and to estimate the effectiveness of measures applied in water reservoir management.

As a framework – CIS guidance No. 24 and a methodology of risk assessment.

Tools for modeling – BILAN, HECResSIM.
The aim – to work out guidelines for a drought management plan preparation

Expected results – a system of drought status indicators suitable for a forecasting system, guidelines for indicator thresholds setting for different drought statuses, measures applied during a drought event

<table>
<thead>
<tr>
<th>Drought status</th>
<th>Groundwater level in a piezometric well</th>
<th>Measures applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>60% of probability of exceeding</td>
<td></td>
</tr>
<tr>
<td>Pre-alert</td>
<td>80%</td>
<td>more frequent monitoring, awareness rising</td>
</tr>
<tr>
<td>Alert</td>
<td>90%</td>
<td>expert group setting up, water use bans</td>
</tr>
<tr>
<td>Emergency</td>
<td>base flow level</td>
<td>restrictions in water supply, preparation for crisis management</td>
</tr>
<tr>
<td>Crisis</td>
<td></td>
<td>water management according to crisis legislation</td>
</tr>
</tbody>
</table>

Thank you for your attention
Draft of the National Adaptation Strategy

- Inventory of expected impacts and principles of adaptation measures for the affected sectors
- Analysis of constraints in the existing legislation
- Analysis of economic tools
- Public awareness rising
- Coordination of policy and organizational measures
Conclusions

The latest water sector policy in EU focused mainly on water quality issues, protection of aquatic ecosystems and naturalisation of water bodies.

Events of floods and droughts indicated the need of completion of the WFD also with issues of flood protection, drought management and adaptation – to achieve a robust water management system.

These conclusions are in harmony with the experience in water management policy in the Czech republic.