Water Management and Agriculture Workshop

Reporting to 2012 JPM implementation on nutrient pollution

Dr. Mihaela Popovici
Technical Expert, Water Management
Bucharest, 5 – 6 November 2012
Significant Water Management Issues

- Organic Pollution
- Nutrient Pollution
- Hazardous Substances Pollution
- Hydromorphological Alterations
Danube River Basin Management Plan

Reflects
- Water status of the DRB waters
- Significant Water Management Issues

Includes
- Joint Programme of Measures
- Evaluation on measure implementation

Enables
- Conclusions on investment & funding
- Potential link to Danube Strategy
First time & unique overview on basin-wide issues

- Water Framework Directive: Implementation in largest international river basin district world-wide
- Impact of environmental issues (SWMIs)
- Analysis of wastewater treatment
- Nutrient management on a large scale
- Hydromorphological alterations
Joint Programme of Measures in the DRB

PROBLEMS OF THE DANUBE

Several SWMIs measures affected by

<table>
<thead>
<tr>
<th>SWIMI</th>
<th>SWIMI</th>
<th>SWIMI</th>
</tr>
</thead>
</table>
SWMI Nutrients Pressures assessment

MONERIS – a model for point source and diffuse source emissions calculations

Inclusion of wetlands!
The model is well established in Europe.

The model results are comparable with such of deterministic dynamic models.

The model includes the main processes in relation to the sources and pathways of nutrient inputs into the surface waters as well as retention.
MONERIS decision support and mgt tool

Concept for integration of data required by the EU directives for MONERIS calculations

Basin wide overview of point and diffuse pollution sources

Calculation of scenarios for possible changes of nutrients loads within the Danube river systems and into the Black Sea

Evaluation of Program of Measures
The AU’s (918) can be combined to 67 SU’s, 21 sub-basins and 19 countries!!
Baseline Scenario – Agriculture 2015 - moderate agricultural development.

Agricultural Scenario-Nutrients 1 2015
N surplus of Danube countries as EU 15 in the year 2000 (i.e. 57 kg/ha/a). No change in atmospheric deposition will occur.

Agricultural Scenario-Nutrients 2 2015
N balance will be same
No change in atmospheric deposition will take place and N surplus in the remaining countries stays unchanged.
Scenarios development (2)

Urban wastewater treatment scenarios

Phosphate Ban Scenario-Nutrients (PBan-Nut)

Baseline Scenario-Nutrients (BS-Nut-2015)
Overall scenario combining the agreed most likely developments in different sectors:
  - urban wastewater
  - agriculture
  - atmospheric deposition
Key Conclusions: nutrients pollution reduction by 2015

- **Management objectives and EU WFD objectives not ensured**
- **N emissions** to surface waters in 2015: 12% lower. Loads to the Black Sea still far above (40%) the load of the 1960’s.
- **P emissions** to surface waters in 2015: 25% lower. Load to the Black Sea still above (15%) that of the 1960’s

⇒ **Introduction of Phosphate free detergents in the DRB**
Agricultural Measures in JPM/DRBM Plan

Broad range of measures in place in Danube countries to address agricultural influences on water

Key lines of action explicitly highlighted in DRBMP

- building storage capacity for manure
- strengthen advisory services and training
- focus on nutrient reduction and pesticides/herbicides use reduction
- land use management
Assessment of measures – legal frame

Implementation of Nitrates Directive
Implementation of UWWTD
Implementation CAP – RDPs
Use of P - free Detergents
Implementation of the ICPDR recommendations on BAP
Nutrients reduction measures

The implementation of the agreed management objectives to achieve the ICPDR’s basin-wide vision for nutrient pollution – is done generally through a wide range of measure types:

enforcement, codes of good practices, metering and tariffs, awareness raising and education, voluntary agreements.
Inter-linkages between the organic and nutrient pollution

The national PoM includes

• measures related to the improvement of wastewater treatment and the application of BAT for industry and agriculture, and as well

• measures to control diffuse nutrient pollution, measures to reduce phosphate emissions from household laundry and dishwasher detergents, and, finally,

• measures addressing the nitrogen pollution from atmospheric deposition.
Packages of agricultural measures related to farming practices and land use management

- Afforestation of agricultural land
- Restrictions of some agricultural activities on slopes
- Prohibition periods for applying fertilizer and manure
- Avoiding the application of fertilisers and manure to high-risk areas
- Limitation of N and P application on agricultural land
- The introduction of the CGAP
- Agricultural organic farming
- Buffer stripes
- Erosion-minimizing cultivation systems
- Establishment of wetlands
- On farm Nutrient Balances Farm
- Advice/Extension Services
The integration of the ND into WFD is central to ensure the legal alignment of the Nitrates Action Programmes (NAP) and RBMP/POMs.

Since its agreement in 1991, implementation in the Danube countries has evolved and as the evidence base has grown in the designation of Nitrate Vulnerable Zones (NVZs) and introduction of a strengthened range of measures in the NAP that farms within NVZs must comply with.

Action programmes have been established in the EU Member States by either applying the whole territory approach or in the designated Nitrate Vulnerable Zones under the Nitrates Directive.

Different Danube countries have taken different approaches regarding the designation of NVZs. The whole territorial approach was applied by Austria, Germany and Slovenia, while in Czech Republic, Hungary, Romania, Slovakia and Bulgaria, NVZs were identified.
Implementation of the Nitrates Directive (2)

The implementation process of Nitrates Directive is ongoing in all MS as a continuous activity.

If necessary, each 4th year a new Action program can be established and should be implemented. The implementation in non MS is within a range of 2019 – 2021 (B&H and HR) for its full implementation.

Specific actions towards the Nitrates Directive implementation:
• Update of the codes of good agricultural practices
• Further designate or enforce Nitrate Vulnerable Zones.
• Refine requirements/restrictions related to manure storage, management and application.
• Improved accounting of water use
• Implement/enforce controls related to agricultural practices
• Enforce regulatory requirements on pesticides related to Directive 91/414/EEC to reduce pesticide pollution.
Assessing first results

The implementation of the Nitrates Directive in the EU MS, an improved application of the concept of BAP in Non EU MS and the reductions in nutrient pollution achieved in the UWWT with N and P removal for agglomerations >10,000 PE will reduce the nutrient pollution considerably!
Thank You!

www.icpdr.org