

Floods and Nature Protection in the Morava / Danube Region

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Summary

To the 3 topics of the presentation:

Analysis of the 1997 flooding in the Morava River Basin

In summer of 1997 the rivers of Moravia, Silesia and the eastern regions of Bohemia were hit by a disastrous flood which brought the maximum human and material losses ever experienced, but also a wave of solidarity that arose at the same time. The government and the authorities have tried to alleviate the basic humanitarian needs of the regions affected. But still during the period of flood and without having the possibility of evaluation of the whole extent of the disaster and without having performed a comprehensive analysis of all the aspects of the flood, people in charge of water management started to speak about technical measures such as the dams or dry polders to be erected in the future in the area affected.

This was the cause why the Czech Environmental Partnership Foundation has launched an invitation for an extraordinary grant aimed at the „Analysis of Flood Events from the Environmental Point of View,„. This grant was won in the beginning of 1997 by the Union for the Morava River which is a public association, since longer time dealing with the issues concerning the river basins and entrance areas.

The objective of the study was to formulate the specification of tasks for a comprehensive and exhausting evaluation of the 1997 floods, for the purpose of analysis and the evaluation of measures proposed by authorities, in order to submit a proposal of an alternative solution aimed at a more differentiated protection of the regions and the maximum elimination of flood damages. Our goal was to initiate the elaboration of a concept of more than one option, in which universities, group of natural historian scientists, non-governmental authorities and other participants would be involved, by using a new and proven approach and experience and, last but not least, to start a broad discussion of the principles of „flood protection policy,„ to be implemented.

The most sad of all the items enumerated are the human losses which amounted to 50 human lives. Affected by the flood were 34 districts in the territory of Moravia and eastern Bohemia. In total the flood has stricken 538 residential areas and conurbations by destroying 2151 flats, making another 5652 to be uninhabitable for longer period of time. 946 km of railway roads were damaged and flooded, 13 railway stations submerged, 26 bridges destroyed and a large damage was experienced on the crop and in the agricultural areas. The total extent of damage was evaluated financially to 63 billion Czech crowns.

Ecological conception of the elimination/reduction of damages resulting from flooding

Basic Principles of the Anti-Flood Measures on the Morava and Becva Rivers

Having considered all possible and feasible measures, the Union for the Morava River suggests the following basic principles accommodating all possible ecological as well as financial requirements:

1. **Increasing the water retention capability of the areas along the Morava and Becva Rivers threatened with peak flows, especially in the spring areas of these rivers.**

This may be achieved by:

- applying afforestation and grassing-down measures, predominately on the soil erosion-prone surfaces of arable land,
- applying soil protection measures,
- renewing the natural state of forests around the rivers, and
- creating wetlands and small reservoirs in order to change overland flows to ground water runoffs.

2. **Protecting the urbanised areas and major industrial and agricultural sites along these rivers by tailor-made anti-flood measures.**

According to this conception, each urban unit on the bottomland will be protected by anti-flood measures dimensioned for the maximal water flow reached during the floods in the year of 1997. Nevertheless, each urban unit may, on the basis of the ratio of flood protection costs and costs of possible flood damages, use not maximal measures such as lower-capacity riverbeds or lower levels of protective dikes.

3. **Keeping or increasing the water retention capability of the bottomland along the Morava and Becva Rivers in the maximal possible way. Creating space for water spillage.**

This may be achieved by:

- applying afforestation and grassing-down measures on the bottomland, thus reducing flood damages and renewing the landscape character of the bottomland,
- cultivating crops on arable land on the bottomland with regard to the frequency and timing of possible floods, and
- keeping the non-urbanised surroundings of the water flows (where the natural state of the water course is advisable to be renewed) in reserve for active water-bed creating processes, for meandering and for creating deep pools and alluvial gravel deposits.

4. **Improving the information system on run-off conditions. Enabling wider access to information on run-off conditions in order to make flood forecasting and run-off adaptations possible.**

It is necessary to realise that all technical anti-flood measures may fail, therefore an emergency system adapted to specific local conditions has to be applied. The emergency system should be created considering the speed of the coming high-flood-water wave, its course and extent.

5. **Compensating lost floodwater storage space in the bottomland with measures improving the retention potential of the river basin and the bottomland.**

Due to building up facilities ensuring tailor-made flood protection of the urban units, the flood-water storage area will be decreased by about 15%, thus reducing the retention capability of the bottom land and increasing maximal flows down the river course. Therefore measures improving the retention potential of the river basin and the bottomland will be needed.

Interaction of the flooding in floodplain related to nature protection areas

Trilateral Cooperation of Non-Governmental Environmental Organisations in the Austrian-Slovak-Czech Areas of Ramsar-Sites Wetlands

DISTELVEREIN, DAPHNE and VERONICA – Partner Organisations

In Austria, conservationists, farmers, hunters and fishermen started up an organisation called DISTELVEREIN, thus ending a “trench war” waged between the interest groups during activities related to the protection and ecologically-sound utilisation of bottomlands. First leader of the organisation, Dr Carl Manzano, later became director of the Danube-Auen National Park. DAPHNE - Institute for Applied Ecology (a non-governmental organisation) has been working in Slovakia for many years, asserting its place amongst established state-run ecological institutions. Both DISTELVEREIN and DAPHNE have already managed to realise many national projects with concrete results.

The VERONICA Ecological Institute, a team of professionals within the Czech Union of Conservationists, was and still is in a rather different position than DAPHNE and DISTELVEREIN. The activities of VERONICA are more broadly based and the problem of bottomlands in Southern Moravia is just one of many activities VERONICA deals with. Therefore, taking account of the total degradation of the bottomland of the Morava River after its adjustment within the above mentioned water-management projects, it is necessary to put emphasis on revitalisation of biotopes of the floodplains and renewing the natural hydrological regime as the paramount condition.

From all publications issued with the help of the organisations from the trilateral area, it is necessary to point out a German-language book called “Fließende Grenzen” (The Flowing Borders) written mainly by Austrian authors with some contributions from Czech and Slovak specialists. This book was issued in 1999. At the same year, another important publication named “Alluvial Meadows of the Morava River – Importance, Renewal and Management” was put out by DAPHNE, with texts parallel in Slovak and English. This book summarises experience of its authors about the meadow management in the bottomland of the Morava River and experience from international collaboration.

Danube-Odra-Elbe Canal

The Danube-Odra-Elbe (DOL) canal project has recently emerged again, and a strong pressure has been brought to bear to build up parts of the canal. The building of the Vienna -Breclav section of the DOL canal together with a port in Breclav (a town in Southern Moravia) as a part of a multimodal transport junction has been included into the Strategic Development Plan of the Southern Moravian Region. The canal should be directed from Vienna through Marchfeld (Moravian Field) to Breclav and then continue further north using a brand new route - that means that the riverbed of the Morava River on the Czech-Slovak border, which was “canalised” for that purpose after 1970, will not be used that way. The Zlin Region included (in connection to the above mentioned activity of the neighbouring Southern-Moravian Region) its version of the canal extension to Prerov (a town in Central Moravia) to a similar development plan with a port to be built up there. The Northern Moravian Region is involved in similar planning activities on the Odra River.

With continuing development of these concrete plans to build up the DOL canal in the Czech Republic, the attitude towards the DOL project has been changing in Slovakia too. There are calls to direct the DOL canal through the riverbed of the Morava River on the Slovak side of

the border as planned by the former communist regime in former Czechoslovakia. The main reason for this rather paradoxical development is a chance for Slovakia to reach money from EU funds which will be probably not accessible for Austria.

Besides utilising positive experience from the three ecological organisations, other “allies” are needed for positive understanding of our aims to protect Ramsar-Sites wetlands in the described trilateral area – for example, local non-governmental organisations in the particular regions, local mayors, land owners and land users, representatives of local authorities and representatives of tourist information centres. It is necessary to look for other possibilities to enable even more efficient dialogue between all people who act and work in the bottomland of the Morava and Dyje Rivers.