### STRUCTURE OF THE RIVER BASIN MANAGEMENT PLAN FURTHER INFORMATION

# WATER FRAMEWORK DIRECTIVE IN THE ELBE CATCHMENT AREA

The International Elbe River Basin Management Plan consists of part A dealing with the whole catchment area, and of national river basin plans (part B) dealing in detail with the national parts of the Elbe catchment area.







#### National River Basin Management Plans are published at the following websites:

- for the German part of the Elbe river basin: www.fgg-elbe.de
- for the Czech part of the Elbe river basin: www.mzp.cz
- for the Austrien part of the Elbe river basin: www.lebensministerium.at; and/or wisa.lebensministerium.at for the Polish part of the Elbe river basin: www.kzgw.gov.pl

Programmes of Measures were developed only at national level and are available at the same websites as the National River Basin Management Plans.

### **Public Participation and Consultation Process** The public opinion is important for us!

The International Elbe River Basin Management Plan was from the very beginning prepared under active participation of the public. Involvement of the public in the Elbe river basin went beyond the requirements of the Water Framework Directive.

The results of environmental and economic analysis of the Elbe catchment area were discussed at a seminar with 140 participants, which was held in connection with the 3rd International conference of the Ministers of the Environment of states in the Elbe catchment area in March 2005 in Dresden.

March 2007 (160 participants, key topic: monitoring programmes),



Since 2007 the International Elbe Forum has become a platform for the participation and consultation process, including the seminars for general public in

in April 2009 (150 participants, key topic: the Draft of the Elbe River Basin Management Plan) and meetings with approximately 40 representatives of major water users and stake holders in March 2007, April 2008 and April 2009. In addition, important water management issues were discussed in the framework of two subject-specific consultations in February 2008. The public also made use of a possibility to send in written comments; 21 of them related to the Draft of the International Elbe River Basin Management Plan (part A).

We hope that the public will continue to support our work also in the future through critical and constructive comments





nad Labem photo: M. Lühr, secretariat of the ICPER

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| Table 2: Important dat<br>2010 – 2015 | tes for implementation of the Water Framework Directive in the years   |
|---------------------------------------|--|
| By the end of 2012                    | Publication of timetable and work programme for production<br>of the River Basin Management Plan for the period<br>2016 – 2021 for public consultation   |
| By the end of 2013                    | Review and if necessary update of environmental and<br>economic analysis of the Elbe catchment area from 2004,<br>including an inventory of emissions, discharges and losses<br>of all priority substances and other pollutants<br>Publication of updated overview of the significant water<br>management issues in the Elbe catchment area for public<br>consultation |
| By the end of 2014                    | Publication of the Draft of the River Basin Management Plar<br>for the period 2016 – 2021 for public consultation  |
| By the end of 2015                    | Publication of the Elbe River Basin Management Plan<br>for the period 2016 – 2021  |

Editorial closing date: 17/12/200 Edition: 800 copies in German, 400 copies in Czech, 400 copies in Englis Print: Harzdruckerei Wernigerode Max-Planck-Straße 12/1 38855 Wernigero

When Water Framework Directive<sup>1)</sup> (WFD) took effect on 22 December 2000, the protection of waters in the EU member states gained a new direction. The objective of this directive is to achieve a good status of all rivers, lakes, coastal waters and groundwaters by 2015.

By the end of the 80's the Elbe was ranked among the most polluted water courses in Europe. However, since the International Commission for the Protection of the Elbe River was established in October 1990, the Czech Republic and Germany worked together in an intense cooperation to improve the status of the Elbe and its catchment area.



The Water Framework Directive has brought new impulses for the Czech-German cooperation within the International Commission for the Protection of the Elbe River. Joint and coordinated procedure adopted by all countries situated in the same river basin was nothing new, however the cooperation of the Czech Republic and Germany



<sup>1)</sup> Directive 2000/60/EC of the European Parliament and the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

Further steps

Publication of the International Elbe River Basin Management Plan of the Elbe is the beginning of its implementation. The most important dates in the years 2010 - 2015 are shown in summary form in table 2. In this context attention will also be paid to the topics of sediment management, water guantity management, maintenance of water courses, evaluation of the knowledge gained within research projects on climate changes as well as meeting points with the European directive on flood risks assessment and management

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|---|--|--|
|   | Postfach 1647/1648<br>39006 Magdeburg<br>Fürstenwallstraße 20<br>39104 Magdeburg | Tel.: +49 (0)391 400 0<br>Fax: +49 (0)391 400 0<br>E-Mail: sekretariat@ikse-mkol |

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with Austria and Poland was further improved despite the fact that these two states have no stake in the Elbe water course and take up only a negligible part of the Elbe catchment area (0.6% and 0.2% respectively of the total catchment area). In addition, new topics have been included into the scope of activities of the International Commission for the Protection of the Elbe River – groundwaters and economic aspects of water management.

Evaluation of surface waters and groundwaters based on the Water Framework Directive is very complex and the assessment criteria are very strict. If only one indicator shows unsatisfactory values, the overall evaluation is unsatisfactory as well. The number of monitored quality elements and indicators has been, compared to the current practice, significantly extended, especially by biological elements, i.e. aquatic animals and plants. As regarding surface waters, ecological and chemical status are evaluated: in case of groundwaters. the evaluation reflects chemical and guantitative status. For the sake of the evaluation, definition of the objectives and planning of measures surface waters and groundwaters were divided into smaller units - water bodies.

According to the criteria of the Water Framework Directive, more than 88% of the surface water bodies are in good chemical status, however, only 10% in good ecological status. As regarding ground water bodies, at present 85% of them are in good quantitative status and 46% in good chemical status. The unsatisfactory status of surface water bodies in the Elbe catchment area is caused especially by hydromorphological alterations to rivers, water flow regulation or nonpoint sources of pollution, such as agriculture and old environmental loads. The groundwater bodies are mainly affected by the inputs of nitrates, old environmental loads and mining.



#### Evaluation based on the Water Framework Directive

The first International Elbe River Basin Management Plan was published in December 2009. It constitutes the basis for further joint procedure of states in the Elbe river basin until 2015 to improve the surface waters and groundwaters status. The International Elbe River Basin Management Plan is based on the latest available environmental, economic and sociological data. The most important stages during its development were carried out with active participation and support of the public.

### Living Rivers – Good Water Quality and Natural Water Structures

To make rivers full of life again, they must have, if possible, natural morphology and basically allow free passage for fish and other aquatic life, for example from fish spawning areas at the



upper stretches of rivers all the way to the estuary into coastal waters. This is, however, impossible in most water courses in the Elbe catchment area due to human activity.

For the first Elbe River Basin Management Plan initially only such water courses were identified, which are due to their interconnecting function especially important for fish population and suitable for water course development. Using these criteria, the Elbe and almost 40 tributaries were classified as ...supra-regional priority water courses". These tributaries with the total length of approximately 3,650 km include about 530 transversal barriers which are so far unpassable for

fish and other aquatic life. The objective is to establish the ecologigal passage on more than 150 transversal barriers by 2015. This will increase the total length of the tributary stretches that fish and other aquatic life can pass from the current 300 km to almost 1,800 km of which approxima-

> tely 62% will be connected with the North Sea. The remaining 38% will be constituted by the upper and middle river stretches where passage will be established by 2015, however without connection to the Elbe. Nevertheless they will be beneficial for fish migrating at middle distances. The remaining tributary stretches classified as priority water courses should allow passage until 2027.

> The Elbe, offering today free passage along 788 km, will be made passable for fish and other aquatic life from the North Sea up to the confluence with the river Orlice in Hradec Králové with the total length of 993 km. In total 10 from 24 transversal barriers which currently cannot be passed will be made passable in the Czech Republic until 2015. This gives fish and other aquatic life the possibility of free passage along the 872 km long stretch of the Elbe. The remaining 121 km of the water course should follow until 2027.





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River Basin Management Plans and Programmes of Measures. At the international level the main attention was aiming at problems which solutions require coordinate procedures in the individual states. Environmental objectives were agreed for ecological passability of water courses and the reduction of nutrients as well as pollutants.

of surface waters and groundwaters and the objectives

of the Water Framework Directive the existing water management issues in

the field of groundwaters and surface waters were characterised and used to define and

agree on supra-regional environmental objectives at the international and national levels. These

objectives are adopted to determine priorities for concrete measures in the individual states within

### Based on the current status

#### Substance load

Reduction of the load on the environmental system of the North Sea by extremely high inputs of nutrients and pollutants is a supra-regional environmental objective which can be achieved only through measures in the whole Elbe catchment area.

#### **Nutrients**

Excessive inputs of nitrogen and phosphorus lead to increased growth of algae and excessive algae bloom in coastal waters, at lower river stretches, in their impounded parts and lakes, resulting in

more frequent lack of oxygen and increased turbidity, adversely affecting other guality components.

With regard to the North Sea coastal waters it is necessary to reduce the nutrient load of nitrogen and phosphorus from all the Elbe catchment area in both indicators by approximately 24%, related to the measurement site at Seemannshöft and substance load from 2006 converted to a long-term discharge. This objective can be achieved only successively by the year 2027, since the transport of nutrients into surface waters through groundwaters takes place with a certain time delay, and the efficiency of a number of measures will thus fully show as late as in the course of several years.

Based on the estimate of the effectiveness of the planned measures in the Czech Republic and Germany the expected reduction of nitrogen and phosphorus load in the first planning period until 2015 compared to the year 2006 was calculated (see table 1). In the last Elbe measurement site at Seemannshöft the reduction of nitrogen load by almost 6,000 tonnes and phosphorus by almost 400 tonnes should be achieved.

## Expected reduction of nutrient load from the Czech Republic and Germany in the

|   | measurement site<br>Schmilka/Hřensko                 | measurement site<br>Seemannshöft<br>(i.e. approximately 94 %<br>of the Elbe catchment area) |                 |
|---|--|---|-----------------|
|   | (i.e. approximately 35 % of the Elbe catchment area) |   |                 |
| Estimated reduction<br>of nutrient load<br>compared to the<br>year 2006 | due to measures in the Czech Republic                | due to measures<br>in Germany   | Total reduction |
|   | [%]  | [%]   | [%]             |
| for nitrogen  | 5,0  | 4,4   | 6,4             |
| for phosphorus  | 7,0  | 6,5   | 9,2             |

#### **Pollutants**

Pollutants in surface waters may have toxic effects on animals and vegetation already in form of trace concentrations, indirectly they may adversely affect human health through various water uses such as drinking water production, eating fish and using flood plains for agricultural purposes. Thanks to the effort of the Czech Republic and Germany the concentrations of pollutants in the Elbe were significantly reduced during the last 20 years.

However, when evaluating the status of surface water bodies in the Elbe it was found out that some substances still do not meet the objectives defined for the good status. A number of substances are also a threat to the objectives of protection of the Sea. The analysis of causes shows that pollutant load originates especially from sediments. The major role in this process is played by storage of pollutants, originating from the previous inputs (especially in the period prior to 1990). Compared to those pollutants, the present inputs are significantly lower. This leads to significant reduction in the process of sediment management, especially in the tidal stretch of the Elbe.

At the international level a sediment management concept will be developed for the whole Elbe catchment area, including proposals of measures to handle pollutant loaded sediments. Also the planned decontaminations of the old environmental loads as well as the measures to reduce point source pollution should help to achieve good status.

For the Elbe catchment area pollutants of supra-regional importance were determined as well as the level of their reduction at selected measurement sites compared to the reference year 2006, necessary to achieve good status. At the same time attention was paid in advance to the requirements for new daughter directive on environmental quality standards which must be first transposed into the national legislation until July 2010, as well as the requirements for the North Sea protection.

/eir on the Saale River in Calbe already passable water courses passability of water courses - plan until 2027 stretches of water courses, which will be passable by 2015 and connected with the North Sea stretches of water courses, which will be passable by 2015 but not yet connected with the North Sea stretches of water courses with unclear pass cities > 90.000 inhabitants cities > 1.000.000 inhabitants logical passability of water courses sal obstacles in the Czech Republi

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80 km



Foam on the North Sea Coast caused by algae blo 

The main measures to reduce the inputs of nutrients include

- measures to minimize redundant nutrients when fertilizing agricultural land and
- measures to reduce soil surface runoff and washing out nitrates into groundwaters and surface waters, e.g. by suitable cultivation of land and building protective riparian zones.

An important potential to reduce nitrogen and phosphorus inputs can be also seen in modernization and intensification of municipal waste water treatment plants, especially in the Czech Republic.

Directive 2008/105/EC of the European Parliament and the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council.