

## **CZECH REPUBLIC: A CASE STUDY ON COMMITMENTS-RELATED BEST PRACTICE OR LESSONS LEARNED IN WATER**

### **Czech Way to Improve Water Quality (10 years of water protection in the Czech Republic)**

The Czech Republic was established as an independent country on January 1, 1993, soon after the principles of sustainable development were adopted in Johannesburg, South Africa. These principles were thus reflected in the approaches to the improvement of water protection in the independent Czech Republic.

Initial state of affairs: In the early '90s, at a time of fundamental political changes in the former Czechoslovakia, the state of the environment, and particularly of the water and air, was considered critical, with an urgent need for its major improvement. This period was characterized by exclusive state ownership of assets, lack of environmental values and effective economic instruments, and exemptions granted by the Government from legislative requirements for water protection. This state of affairs was reflected, amongst other things, in insufficient drainage and waste water treatment in cities and municipalities, high pollution of surface waters and groundwater, and a continuing decrease in the number and species diversity of organisms dependent on water. A specific issue was also related to destruction of groundwater sources by long-term pollution from industrial enterprises and from the presence of the Soviet army. International cooperation was limited to the most essential activities in the area of water courses shared with neighboring countries. Positive factors included a system of water management on the basis of watersheds and the existence of functional monitoring, control and planning.

Stage of first aid: All the above-mentioned shortcomings had to be systematically and comprehensively addressed in the independent Czech Republic. As a basic precondition for improving the state of water management, steps were taken to ensure enforceability of legislative requirements, emission and pollution limits were stipulated, transfer of the ownership of infrastructure (water mains and sewerage) from the state to municipalities was commenced and the state provided support for its development, as well as for removal of environmental burdens from the past. In addition, a decrease in state subsidies for operational costs led to gradual renewal of recognition of environmental values. A change in the ownership relations in industry led to restructuring of production and the closing of obsolete enterprises producing a high level of pollution and, in agriculture, this change led to a rapid decrease in applied fertilizers. A system of effective international cooperation was established in the protection of the watersheds of the Elbe, Odra and Danube which are of European importance and within which the Czech Republic is located.

Naturally, these systemic changes were reflected in improved management of water (e.g. withdrawals of water decreased in the 1990-1999 period by 88 % in agriculture, by 47 % in industry, and by 34 % in public water mains) and the measuring of consumption of drinking water became normal in Czech households. During this 10-year period, which could be called the stage of provision of first aid for Czech rivers, 333 waste water treatment plants were built or fundamentally reconstructed and the pollution discharged from point sources was reduced by 85 % for the BOD5 indicator, 78 % for the COD indicator and 84 % for insoluble substances.

Preparation for accession to EU: The next stage in the development of water protection in the Czech Republic began in early 1999, when the first negotiations commenced on preparation for accession of the Czech Republic to the European Union. Comparative analyses performed at that time showed that the area of water quality would be one of the most complex and expensive

fields not only in the framework of the chapter “Environment”, but also within the entire process of preparation for accession. Implementation costs, particularly for compliance with the requirements for the quality of drinking water, the level of treatment of municipal waste waters, and protection of water against pollution by nitrates from agriculture, were estimated at that time at CZK 150 billion (USD 5,6 billion). The requirements of the European water law were incorporated in Czech legislation during this period, especially through the Act on Waters, the Act on Public Water Mains and Sewerages, and the Act on Public Health. The Government stipulated the target values for the quality of surface waters and the limit values for discharging municipal and industrial waste waters, and delimited sensitive areas (the entire territory of the Czech Republic) and vulnerable areas (36 % of the territory of the Czech Republic). Negotiations on accession of the Czech Republic to the European Union were completed with agreement on one transitional period for ensuring compliance with the requirements on treatment of municipal waste waters by the end of 2010. Furthermore, construction and reconstruction continued mainly of urban waste water treatment plants for municipalities over 10 thous. equiv. inhabitants, including removal of compounds of nitrogen and phosphorus. In addition, funds from the state budget (including a loan from the European Investment Bank), the State Environmental Fund (whose income includes fees for discharge of waste waters), the ISPA program and internal sources of investors are also used for this purpose. An important instrument for limiting the impact of municipal pollution also consists in voluntary agreements concluded with the producers of detergents (as of 2005, no detergents containing phosphates will be supplied to the Czech market) and the Czech Dental Chamber on elimination of amalgams from discharged waste waters. A code of good agricultural practice was adopted to limit pollution from diffuse agricultural sources.

It is logical that the adopted systemic measures in legislation and control, in the area of economic instruments, and organization and institutional arrangement were reflected in a higher level of evaluated parameters of water use and quality of surface waters and groundwater, and in an increase in the species diversity of organisms dependent on water.

In addition to the above mentioned reduction of withdrawals of water, the following were also achieved: the volume of water consumed in households decreased from 171 l per capita per day in 1989 to 103 l per capita per day in 2002, the number of inhabitants supplied with drinking water from public water mains increased to 89.8 %, the number of inhabitants connected to public sewerages increased to 77.4 %, and the fraction of treated municipal waste waters increased from 71.5 % in 1989 to 92.6 % in 2002. All cities and municipalities in the Czech Republic with over 10 thous. inhabitants are equipped with a waste water treatment plant. Recognition of environmental values was also restored in this field. The “polluter pays” principle is implemented in this area (for 9 qualitative parameters) and the operational costs are no longer subsidized by the state. While this has led to a marked increase in the price of drinking water and discharge of waste water compared to the prices of 1989, a decrease in consumption and its measurement has had positive effects on savings of investment and operational costs. The amount of pollution discharged has been also substantially reduced and the quality of surface waters has increased (see Annexes 1 and 2). This has also enabled the return of organisms that have previously disappeared from Czech rivers and streams. For example, in the Elbe, which was called the European sewer in 1989, the number of fish species increased from 26 in early ‘80s to the current 52, and, even more important, the people have returned to rivers and lakes.

Conclusion: The development of water protection in the Czech Republic shows that fundamental improvement, which is an essential precondition for further sustainable development, can be achieved in a relatively short term through systematic measures of a legislative, organizational, institutional and economic character that are accepted by the entire society. Sustainable

development will be the main subject of the next stage that is already underway and that could be characterized, similarly as in a number of other European countries, as a stage of implementation of the EU Framework Water Directive whose goal is to achieve implementation of the main principles of sustainable development in the area of water protection by the year 2015.

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