



MINISTRY
OF AGRICULTURE

MINISTRY
OF THE ENVIRONMENT

REPORT ON THE STATE OF WATER MANAGEMENT IN THE CZECH REPUBLIC

2006

By December 2006

REPORT ON THE STATE OF WATER MANAGEMENT IN THE CZECH REPUBLIC IN 2006

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● Ministry of Agriculture
● Ministry of the Environment

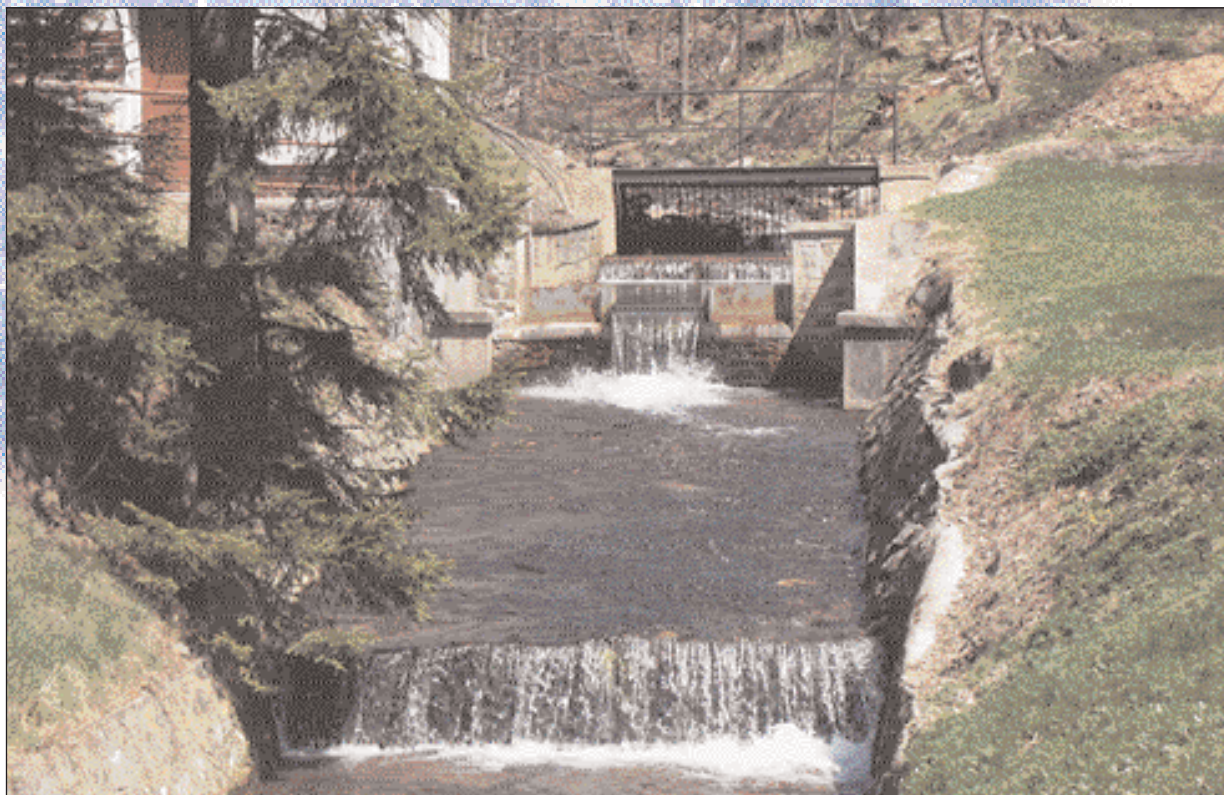
FOREWORD BY MINISTER



Dear readers,

This year, you have in your hands the tenth anniversary edition of the „Report on the Czech Republic's Water Management in 2006“, briefly entitled the Blue Report. This publication is summary informational material on all fields and activities in water management for 2006 and builds upon previous reports gradually worked out during the period from 1997 to 2005, which the Ministry of Agriculture has published annually.

Chapters of this summary report include, in particular, a description of the water management and water protection status in the last year, which has been completed for selected areas with characteristic developmental trends in longer time sequences. The report contains verified information on total water quantity and the quantification of its most significant factors in the field of precipitation, runoff rates and the groundwater system. In relation to the previous period, there is an assessment of outputs from the water management balance, water management administration, the field of water supplies and sewerage, water pollution resources, water protection, and the implementation of various types of financial support granted within the framework of water management. In its further parts, the report focuses on amendments of legislative measures, international relationships, water management planning, fisheries, and fishpond management, including research and development within the framework of water management. Another part of this year's edition of the Blue Report for 2006 is a chapter describing flood situations which had a significant impact on a major part of the Czech Republic's territory in 2006.



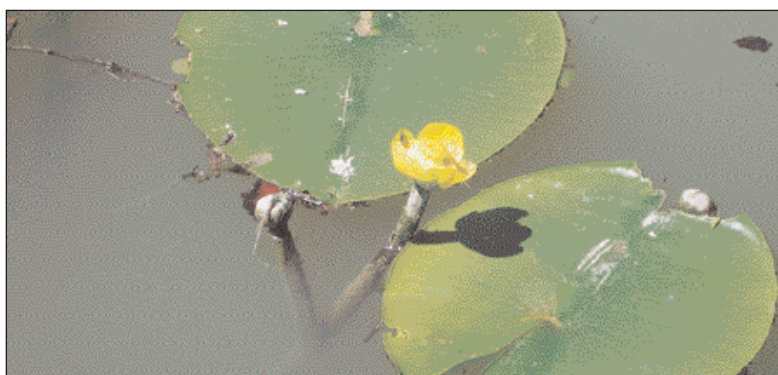
Another part of this report is complex information on water quality in our watercourses provided for within the framework of the co-operation with the Ministry of the Environment. Detailed information on surface water and groundwater quality, pollution resources and water protection measures can be found in the „Report on the Czech Republic's Water Protection Status in 2006“, worked out simultaneously with the Ministry of the Environment, which shall be published on the Internet but is not issued in printed form like this publication. Similarly detailed data on the drinking supply from water supplies, on the sewerage system and municipal wastewater purification can be found in the material „Water Supplies and Sewerage in the Czech Republic in 2006“, worked out and issued by the Ministry of Agriculture during the course of August 2007.

I believe that this now traditional and required publication now not only represents a quality information resource for water management professionals but that it will also help satisfy general public demand for information on our waters as an essential component of the environment.

Mgr. Petr Gandalovič

Minister of Agriculture of the Czech Republic

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STATE OF SURFACE WATER AND GROUNDWATER

1.1 Hydrological balance

Similar to the preceding year, 2006 was average in terms of rainfall, with an annual total of 694 mm on the territory of the Czech Republic 694 mm, which is only 1 mm more than the long-term norm. In Bohemia total rainfall corresponded to 102 % of the long-term norm, and on the territory of Moravia and Silesia rainfall was approximately 96 % of the long-term annual norm. In total 699 mm fell in Bohemia, and in Moravia and Silesia 688 mm fell.

From a comparison of long-term monthly norms it is seen that on the territory of the Czech Republic in 2006

Table 1.1.1

Renewable water sources in years 1997 – 2006 in millions m³

Item	Annual values									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Rainfall	57 809	56 153	49 291	54 733	63 960	71 298	40 695	53 629	57 730	55 837
Evapotranspiration	39 859	42 750	35 381	40 353	48 537	48 533	29 319	41 473	42 872	37 617
Annual inflow ¹⁾	653	541	550	573	761	1 341	524	640	781	1 070
Annual outflow ²⁾	18 603	13 944	14 460	14 953	16 184	24 106	11 900	12 796	15 639	19 290
Sources of surface water ³⁾	6 200	4 825	4 875	4 789	6 600	6 506	3 758	4 270	5 489	5 317
Useable sources of groundwater	1 430	1 330	1 390	1 204	1 440	1 625	1 195	1 224	1 330	1 338

Source: Czech Hydro-Meteorological Institute

Pozn.: ¹⁾ Annual inflow to territory of the Czech Republic from neighbouring states.

²⁾ Annual outflow from territory of the Czech Republic.

³⁾ Designated as flow in main catchment areas with 95 % ensuring.

six months had above-normal rainfall – February (112 % N), March (167 % N), April (153 % N), May (120 % N), August (184 % N) and November (102 % N). In contrast with this, the months July (42 % N), September (only 34 % N) and December (56 % N) were

very dry months. In January, June and October the rainfall total corresponded to 73 to 94 % N. There were significant differences in rainfall totals between Bohemia, Moravia and Silesia in January (Bohemia – 59 % N, Moravia – 90 % N), and primarily in October, which was very dry in the east of the Czech Republic (Bohemia – 77 % N, Moravia – 34 % N). It is noteworthy that in Bohemia the August rainfall reached almost twice the monthly norm (194 % N).

From the aspect of absolute rainfall totals, in 2006 the rainiest month was August with 149 mm, and the driest month was September, when only 20 mm of rain fell. It is of interest that the rainiest month of August was preceded (June 35 mm) and followed by very dry months (September 20 mm, and in Moravia and Silesia only 20 mm of rain fell too in October). Overall in 2006, the rainfall total reached a maximum of 35 mm in five months.

In the course of 2006 there were several periods with significant precipitation totals, which at the start of the year in particular lead to an accumulation of record snow reserves and later in the year also to flood flows.



Metuje river, Peklo

On most of the territory of the Czech Republic, 2006 was slightly above average in terms of flow. The average annual flows were mainly from 110 to 130 % of long-term annual averages Q_a . In relative terms, the highest annual average flows (120 to 135 % Q_a) occurred on rivers in the catchment area of the Vltava and the Dyje (Lužnice in Bechyně 159 % Q_a). In contrast, overall lower flows in a range from 100 to 115 % Q_a were recorded on rivers in the catchment area of the Elbe and the Ohře. The Odra in Bohumín displayed an annual flow at the level of 95 % Q_a .

From the aspect of the annual course, the start (January, February) and end of 2006 (September, October, November and December) were in terms of flow below average in most of the monitored rivers. The only exception was the rivers in the catchment area of the upper Elbe, where the values of monthly flows in September and November exceeded the values of the long-term average Q_m and the Olše, where the start of the year was also above average in terms of flow. March to June were mostly above average in terms of flow. The wateriest month was April, where most of the monitored rivers displayed 3 to 4.5 times the long-term April average. July was below average, August was mainly slightly below average. Towards the end of the year there were drops, and the month with the least water was December with 40 to 60 % Q_m .

The first quarter of the year can be characterised as having a mainly persistent or slightly fluctuating tendency as a result of the intense development of ice phenomena which caused a swelling of water levels. In the second quarter, from April to June, the average monthly flows in the vast majority of rivers monitored were above average. At the start of the period, the flood situation resulted in the fact that April was significantly above average in terms of flow. In the period from July to September, i.e., in

the third quarter, flows in most of the monitored catchment areas varied greatly and the average monthly flows mostly ranged from 85 to 130 % Q_m . The last quarter of 2006 had the lowest water flow out of the entire year. With the exception of rivers from the catchment area of the Elbe and the Olše in November (105 to 195 % Q_m), the average monthly flows for all the monitored rivers in the course of the entire period were below average, mainly in the range from 40 to 85 % Q_m .

2006 brought with it several significant flood situations. From the aspect of territorial scope and, for most rivers, from the aspect of the culmination achieved, the spring flood at the end of March and start of April was the dominant one.

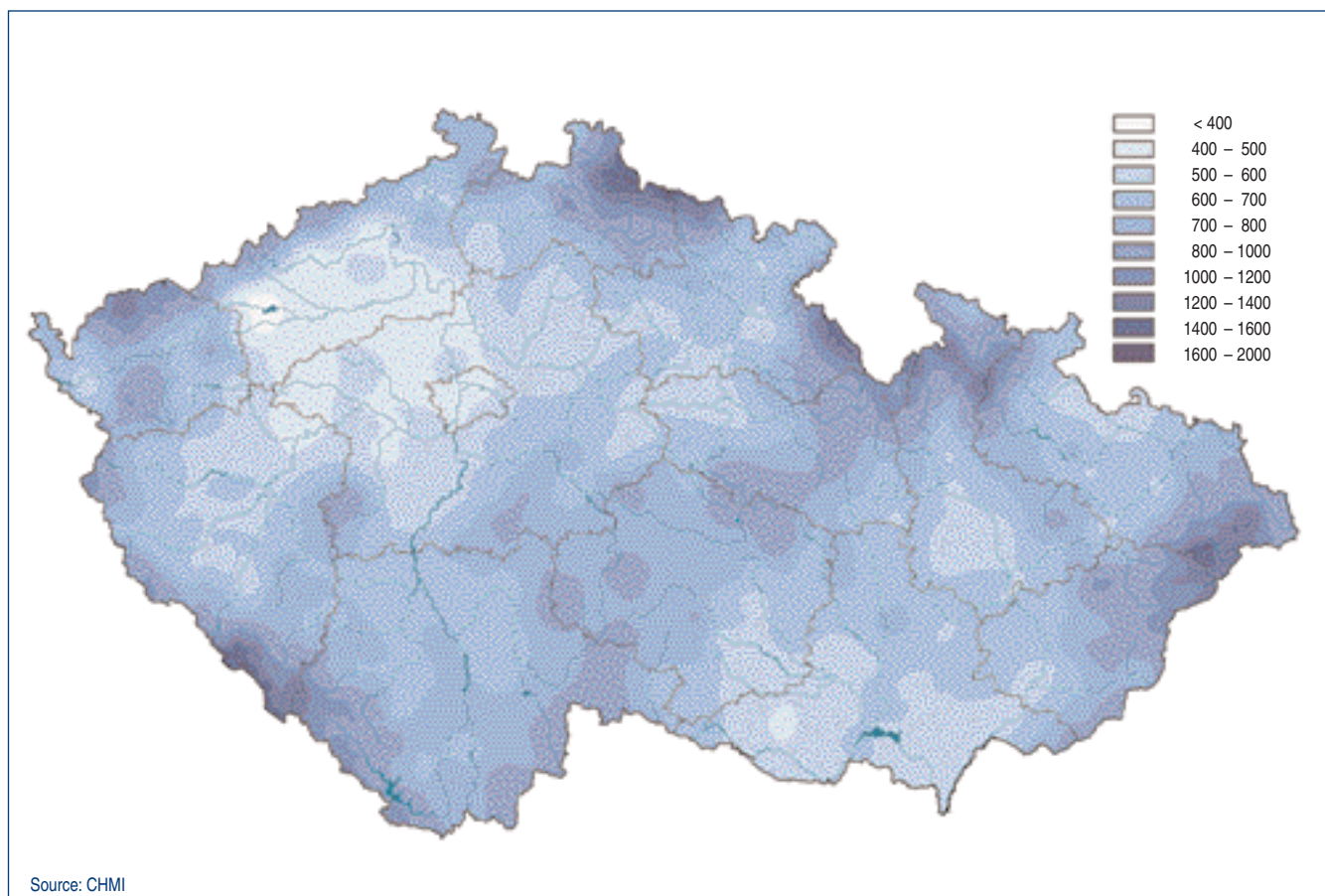
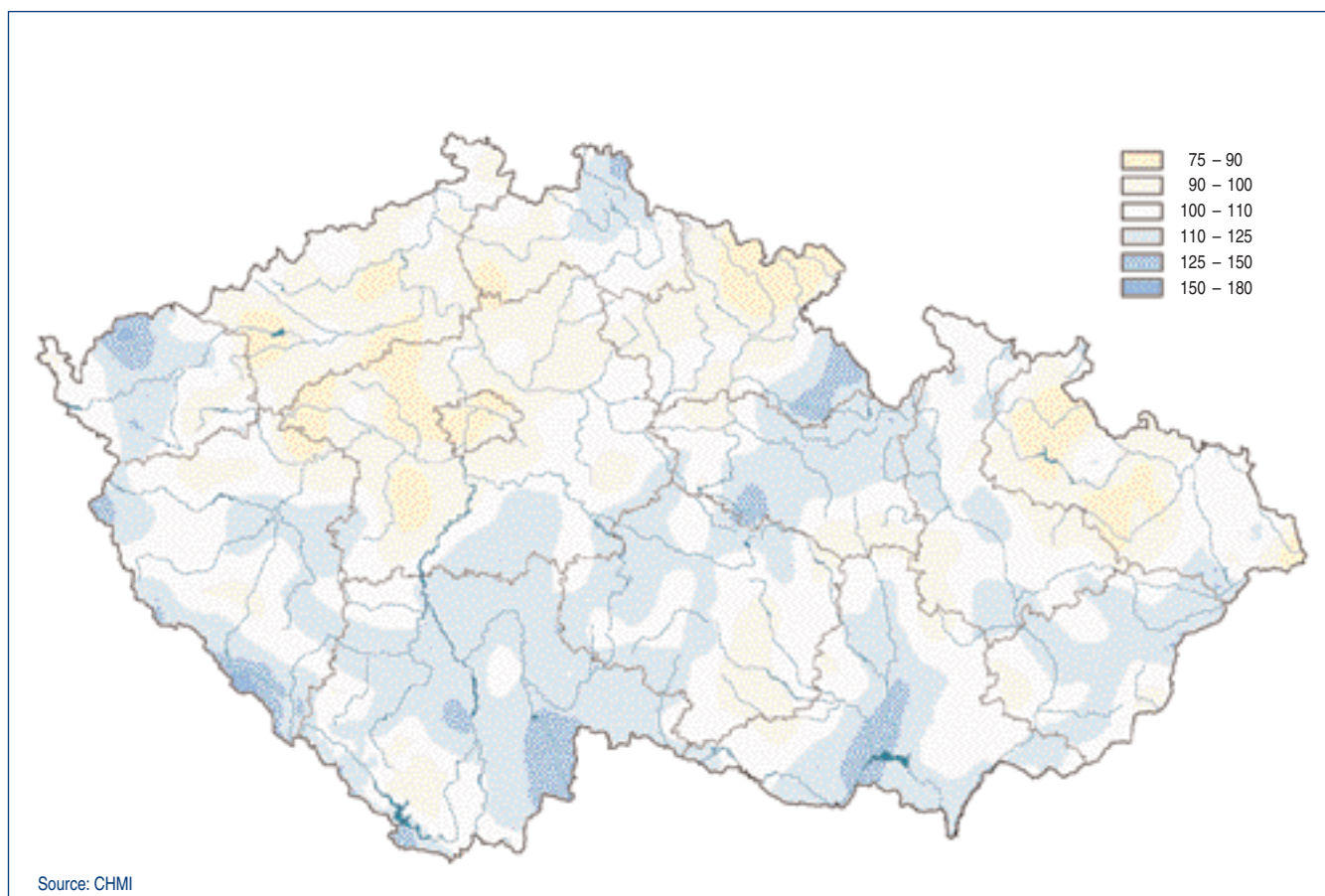
The spring flood was most significantly expressed in the medium and lower lying areas, in particular in the south and north-east of Bohemia and also in south Moravia. In the catchment areas of the Mrlina, Lužnice, Dyje, Sázava and the lower Morava, the culmination flows reached Q_{20} to Q_{50} , and in places up to Q_{100} . The floods were characterised primarily by large snow reserves in the medium and lower lying areas and also by their long persistence until the end of March. At the end of the flood there was a sharp increase in temperature, when the daytime maximum temperature on 27.3. rose to 20 °C. There was also rainfall (from the 28.3 to the 29.3. up to 35 mm). The result was an intense thaw, in particular in the area affected by rainfall, i.e., in the aforementioned catchment areas. At the end of May frontal rainfall which persisted for three days in the south-western part of Bohemia (up to 140 mm in two days) caused floods in rivers in the catchment area of the upper Vltava (Q_5 to Q_{10}), the Otava (to Q_5), Skalice (to Q_{50}), Lužnice (Q_5) and Berounka (Q_5 to Q_{10}), Mže (to Q_{20}), Klábava and Úterský Stream (to Q_{50}).

At the end of June and start of July there was a flood situation caused by intense intermittently heavy rainfall. This mostly affected the upper part of the catchment area of the Dyje and catchment area of the Lužnice and in

part also the catchment area of the Malše. The rainfall totals for the night of 29.6. exceeded 100 mm on a relatively wide area. The result was a sharp increase in water levels in the catchment area of the upper Dyje. The flow of the Dyje above Vranov significantly exceeded the value Q_{100} , and the highest ever level from a spring flood was also exceeded. In the first ten days of August, the extreme rainfall combined with a depression over central Europe reinforced in particular in the northern weather area of the Giant Mountains and Jizera Mountains caused a flood situation during which the culmination flows on the Jizera reached Q_{10} , on the Elbe in Vestřev Q_{20} and on the upper Elbe on the inflow to the waterworks (referred to hereinafter as „WW“) Labská the flow got close to the value Q_{100} .

At the start of 2006 the levels of groundwater in monitored wells and the yield of springs were below the long-term monthly averages, and they increased slightly. During January there was an overall stagnation and drop in the level of groundwater as a result of rapid cooling and snowfall.

The drop continued during February, when there were very low temperatures and significant snowfall. And so at most of the observed objects there was a drop below the long-term monthly averages. Only the catchment areas of the Vltava, Dyje and Odra were slightly above average, but the catchment areas of the lower Elbe and the Ohře were significantly below average. The minima were attained in mid February, and at the end of this month the slight increase in temperature started to be expressed in objects monitoring the shallow circulation of groundwater by an increase in levels and yield. From March, when the increase in temperature continued and precipitation changed from snow to rain and its totals significantly exceeded the long-term norms, the levels of wells and yield of springs increased in most of the monitored objects.

Picture 1.1.1 Total rainfall on the territory of the Czech Republic in 2006 in millimetres**Picture 1.1.2 Total rainfall on the territory of the Czech Republic in 2006 in % of the norm 1961 – 1990**

June had temperatures extraordinarily above average and rainfall extraordinarily below average, and this led to a significant drop in levels and yields in all the monitored groundwater objects. But in connection with the significant and sufficient topping up of groundwater in April the long-term minima were exceeded only exceptionally, but the values in the catchment area of the Morava, Dyje and Vltava did not even fall below the long-term average.

In contrast with July, August was cold and wet. Above average rainfall in the first ten days of August in the Ore Mountains and the Czech-Moravian Highlands caused a local flood situation and subsequent increase in groundwater, in particular in the catchment area of the Dyje, the upper Elbe, Morava and in part also the Odra. In other catchment areas, a slight drop continued. As a result of below-average rainfall and above-average temperatures, from September there was a slight drop in the levels of groundwater and the yield of springs throughout the entire territory of the Czech Republic. During the November floods, groundwater was partially topped up, and the long-term monthly averages were exceeded. In the warm month of December, which was also below average in terms of rainfall, the gradual drop continued until the end of the year.

1.2 Quality of surface water

An evaluation of pollution was performed pursuant to ČSN 75 7221 on profiles of the state network for the monitoring of surface water quality. On the monitored profiles the most frequently measured indicators were recorded in the group „General, physical and chemical indicators“.

The most problematic of them was AOX, which on 90 % of profiles reached class III and higher, and even some border rivers exceeded the limit of 40 µg.l⁻¹ despite the fact that other substances were classified only as I or III class. Total phosphorous was evaluated as 75 % of

profiles of class III and higher, in particular on rivers with less water and the lower reaches of larger rivers (the Jičinka, Litava, Litavka, Lučina, Loděnice, Trkmanka, lower reach of the Svratka, Bečva). But ammoniac and nitrous nitrogen was evaluated in almost 75% of values as class I and II, which is a positive finding.

In the group „specific organic substances“, no indicator was in class V, and most values were under the limit of determinability, and thus in class I, or occasionally in class II. One exception was 1,1,2,2-tetrachloroethen in the Úhlava in Bystřice and 1,1,2-trichloroethen in the Bílina in Ústí nad Labem and in Mandava nad Varnsdorfem, which was classified in class IV. The total for PAH in some profiles reaches class III, in particular in the Úhlava, Olše and lower reach of the Lužnice, Morava, Odra and in most profiles on the Elbe where it was monitored. The total for PCB was exceeded very rarely, the highest values for the congeners PCB 28 + 31 were recorded on the profile Svratka – Židlochovice and Odra – Jakubčovice (11.3 and 13.0 ng.l⁻¹ respectively).

All iron, manganese and zinc are substances which most frequently reach class III and higher in the group „metals and metalloids“ even on rivers less burdened by metals such as the Sázava, Opava, the Ohře and the Jihlava. The rivers most heavily polluted by the substances of this group include the Litavka (arsenic, cadmium, zinc and lead) in the Příbram area and the Nisa (cadmium, copper, nickel, zinc). There was a higher presence of lead in the Elbe, the Olšava, the lower reach of the Svratka and in the Vltava in Zelčín. Arsenic was recorded in a higher concentration in particular in the rivers with less water in northern Bohemia (Bílina, Bystřice – Ostrov nad Ohří, Chodovský Stream, Teplický Stream) as a result of north Bohemian industry, in particular conventional power stations and their ash dumps.

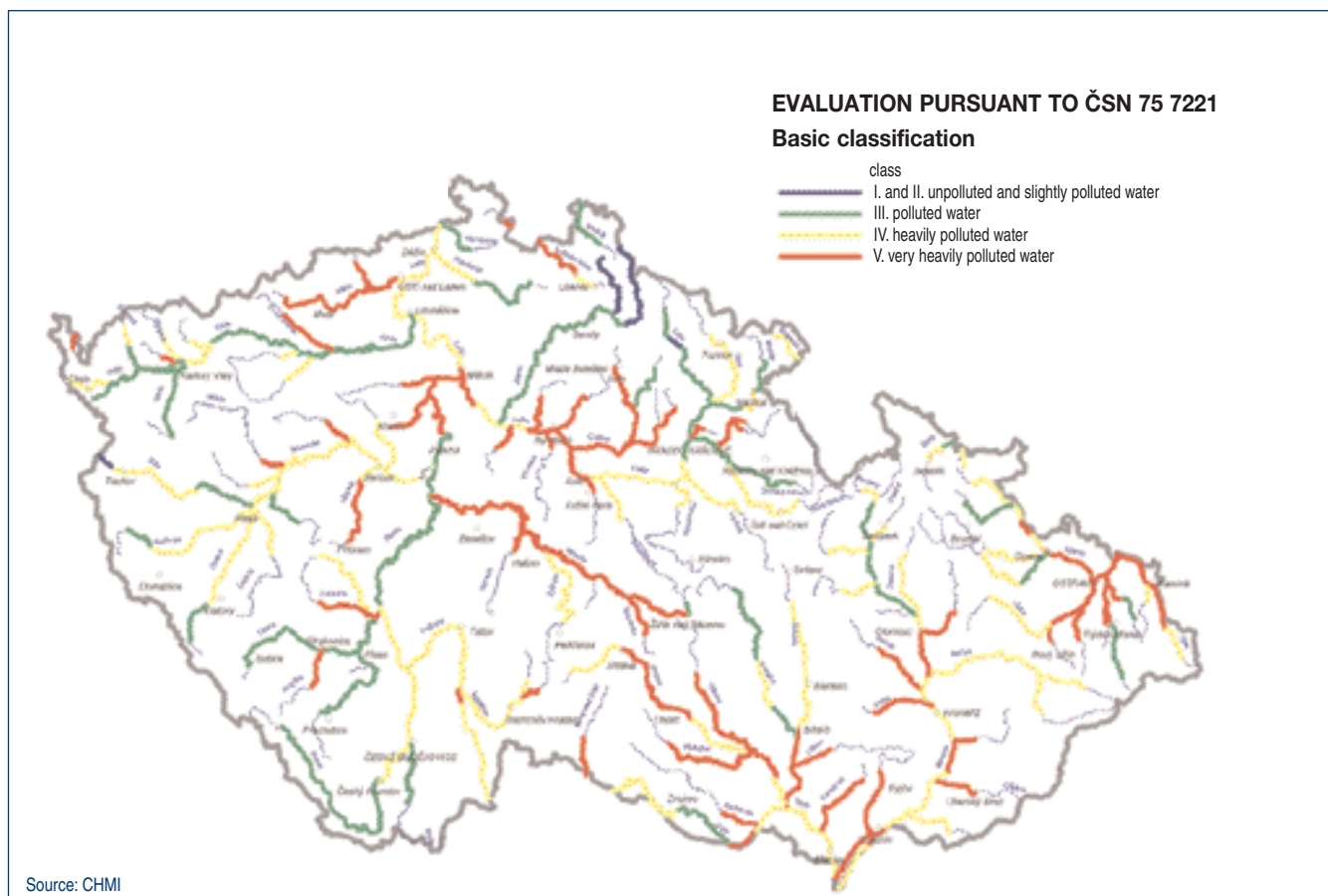
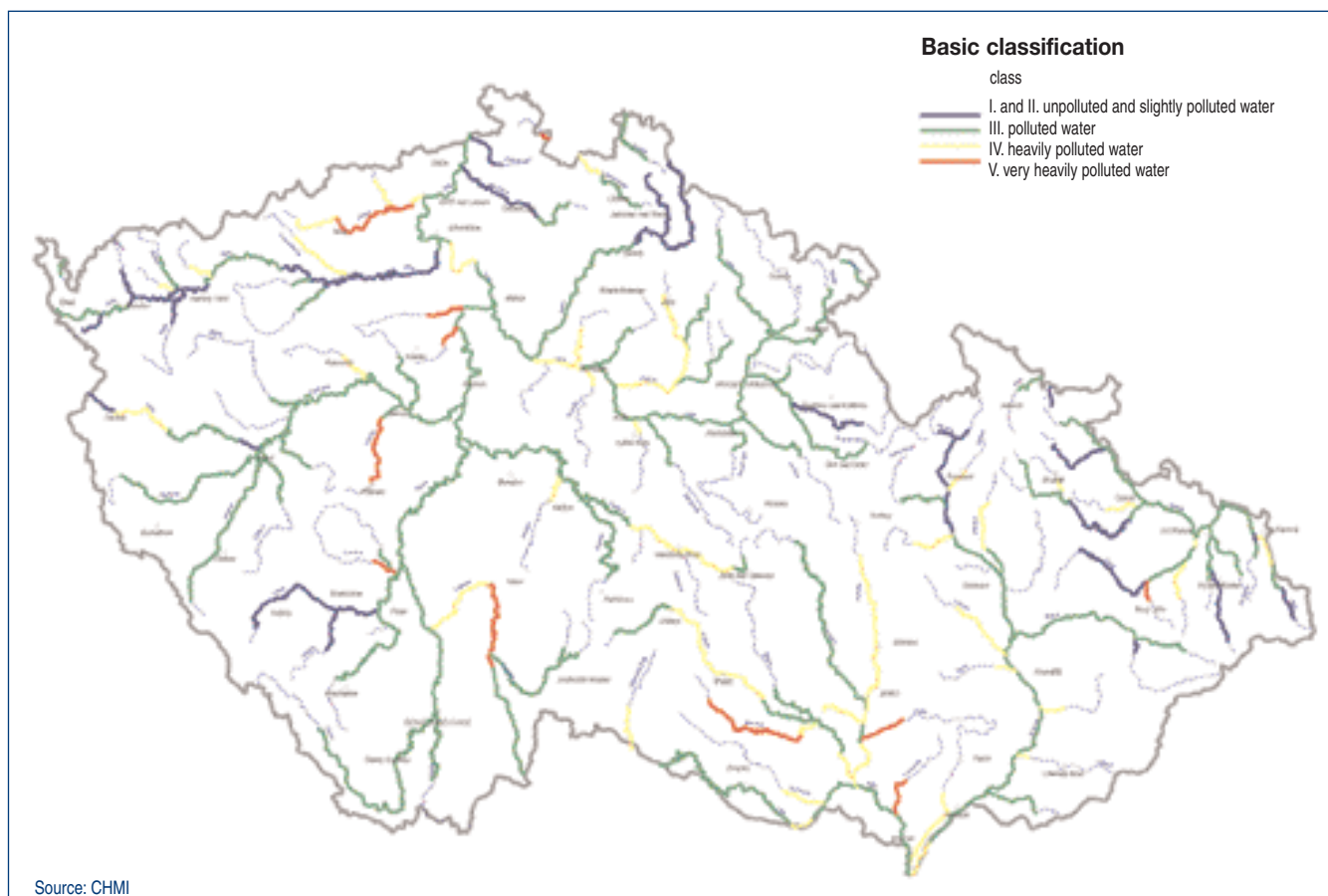
In general one can assert that as expected the least burdened rivers are certain border rivers (the Černá voda, Divoká Bystřice, Flájský Stream, Mohelnice, Rokytnice, Rybný Stream, Řezná) and upper reaches of some rivers (the Svrat-

ka, Ostravice, Odra, Morava). The most significant rivers relatively little polluted along their entire length include the Jizera (apart from dissolved oxygen), the Metuje, Otava (apart from the concluding profile Topělec), and the Ohře (with the exception of AOX). In contrast, the most heavily polluted are those with little water flowing through industrial agglomerations or through areas with intense farming – the Bakovský Stream, Bílina, Haná, Chodovský Stream, Teplický Stream, Litava, Rakovnický Stream, Trkmanka, lower reaches of the Ostravice, Lužnice and the Svratka.

In all the catchment areas where there was a flood in the spring of 2006, the values of CCO_{Mn}, CCO_{Cr}, BCO₅, NL 105 °C, TOC, all iron, manganese and frequently also zinc and PAH increased several fold, and thus negatively influenced the annual evaluation. In many cases there was a significant worsening of classification, despite the fact that this did not have to be from the global aspect.

Microbial pollution of rivers is a significant factor, in particular during the processing of surface water into drinking water and during the use of surface water for bathing. And at the same time the development of algae and cyanobacteria degrades surface water.

In 2006 in the Czech Republic, out of a total number of 188 localities announced by the EC as localities intended for bathing in the sense of directive No 76/160/EEC, a bathing ban was issued in 18 localities (9.6 %) and in cases (8.5 %) bathing water did not correspond to the limit values in the sense of this directive. This data applies to all bathing areas (pursuant to Act No 254/2001 Coll., concerning water, in the valid wording, and decree No 159/2003 Coll., as amended by decree No 168/2006 Coll.) and also those natural bathing sites in the sense of Act No 258/2000 Coll., in the valid wording) which come under the regime of the aforementioned European directive.

Picture 1.2.1 Water quality in the watercourses of the Czech Republic in years 1991 – 1992**Picture 1.2.2 Water quality in the watercourses of the Czech Republic in years 2005 – 2006**

In cooperation with the Ministry of the Environment (referred to hereinafter as the „MoE“), in 2006 the Ministry of health (referred to hereinafter as the „MoH“) prepared an amendment to decree No 159/2003 Coll., which designates surface water used for the bathing of persons, and on 1.5.2006 decree No 168/2006 Coll., which amends decree No 159/2003 Coll., became valid. –With certain exceptions, these are localities on reservoirs and recreational fishponds. In addition to this, the EU updated the relevant directive, previously 76/160/EEC, now 2006/7/EC, concerning the management of bathing water quality, in which it places emphasis on protection from microbial pollution. Bacterial pollution is expressed significantly on rivers with less water (the Litavka, Trkmanka, Teplický Stream, Klejnárka, Bystřice, Zlatý Stream, Bílina and the Úhlava) and on larger rivers, in particular, in the catchment area of the Odra (the Odra, the Olše, Opava and Ostravice) in their lower reaches. The values for thermotolerant coliform bacteria most frequently exceeded imission limits, almost 70% of profiles, coliform bacteria and enterococcus 40 – 45 % of profiles.

The need to monitor the burden of watercourses by especially dangerous and harmful substances is growing. With new findings and improved analytical methods their spectrum is increasing. In recent years the number of monitored pesticides has increased, and it is seen that it will also be necessary to check pollution by medicines, which have a highly negative impact on the river ecosystems.

PAH was monitored in particular in watercourses in the catchment area of the Elbe, the Ohře and Vltava. PAH is no longer expressed in total sums, but the measured concentration of individual hydrocarbons is given. Most concentrations were above the determinable limit; this is the result of processes involving the burning of fossil fuels and certain industrial technologies (a smaller amount of PAH may also arise in water

naturally – algae biosynthesis). It is necessary to give increased attention to PAH, because many of them are carcinogenic. Heavier pollution by these substances is expressed in the Vltava, in the Zelčína and in the Elbe, on the lower reaches of the Lužnice, Bílina, Bečva, Dyje, Morava, Odra and the Svitava below Brno. The Ostravice in Ostrava was affected with the highest concentration.

In a manner similar to PCB, DDT and its congeners are substances banned from use, but (in view of its slow breakdown) DDT and its congeners persist in some streams (in lower concentrations). DDT and its congeners were detected in the Sázava, the lower reaches of the Vltava, the Otava, the Litavka in Trhové Dušnice, at the mouth of the Bílina and in the Olšava.

The group of substances included under the indicator AOX is very broad, and it has been measured in each profile on which it was monitored in values exceeding the limit of determinability. In one third of the profiles it exceeded the imission standard of government decree No 61/2003 Coll., which is 30 µg.l⁻¹.

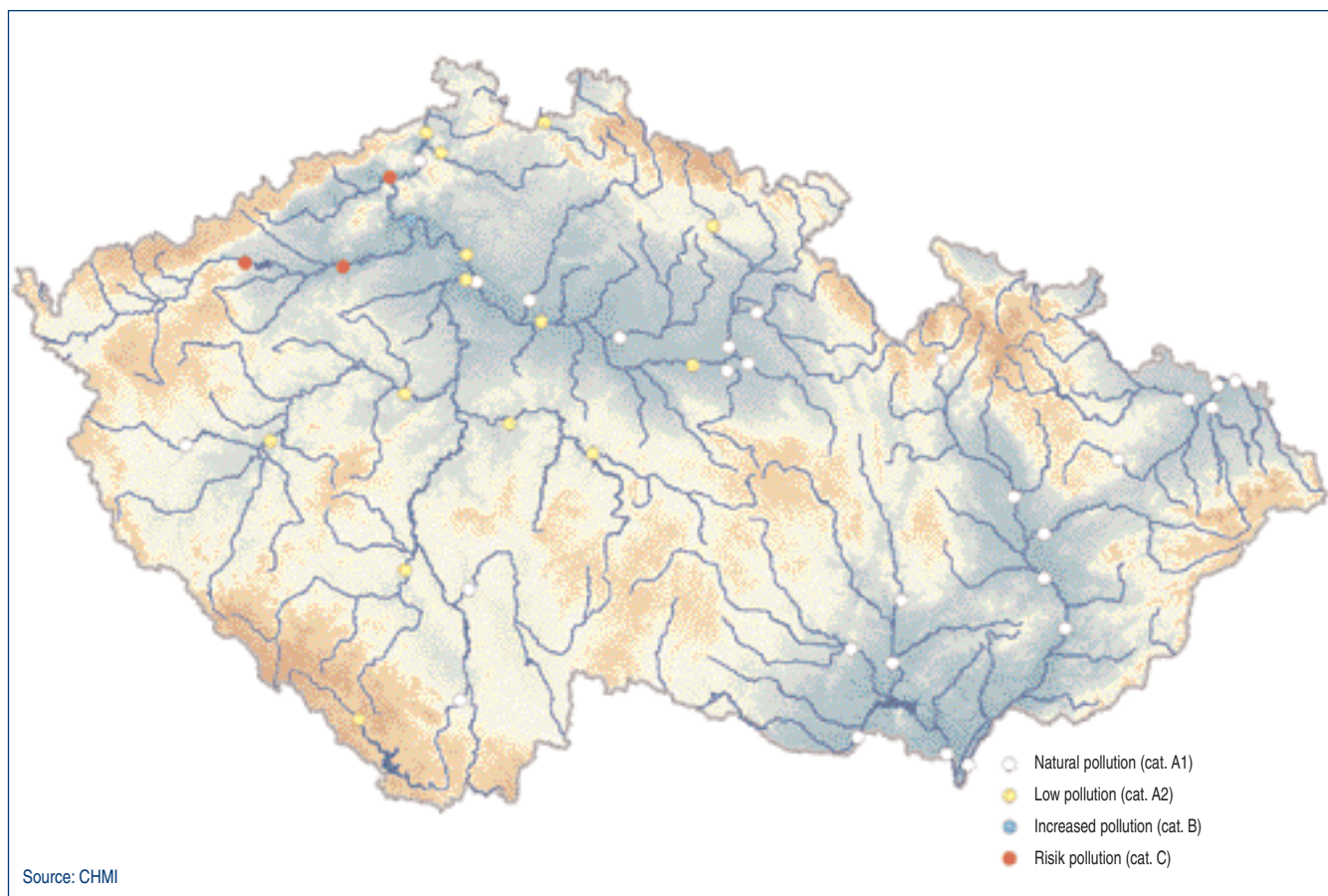
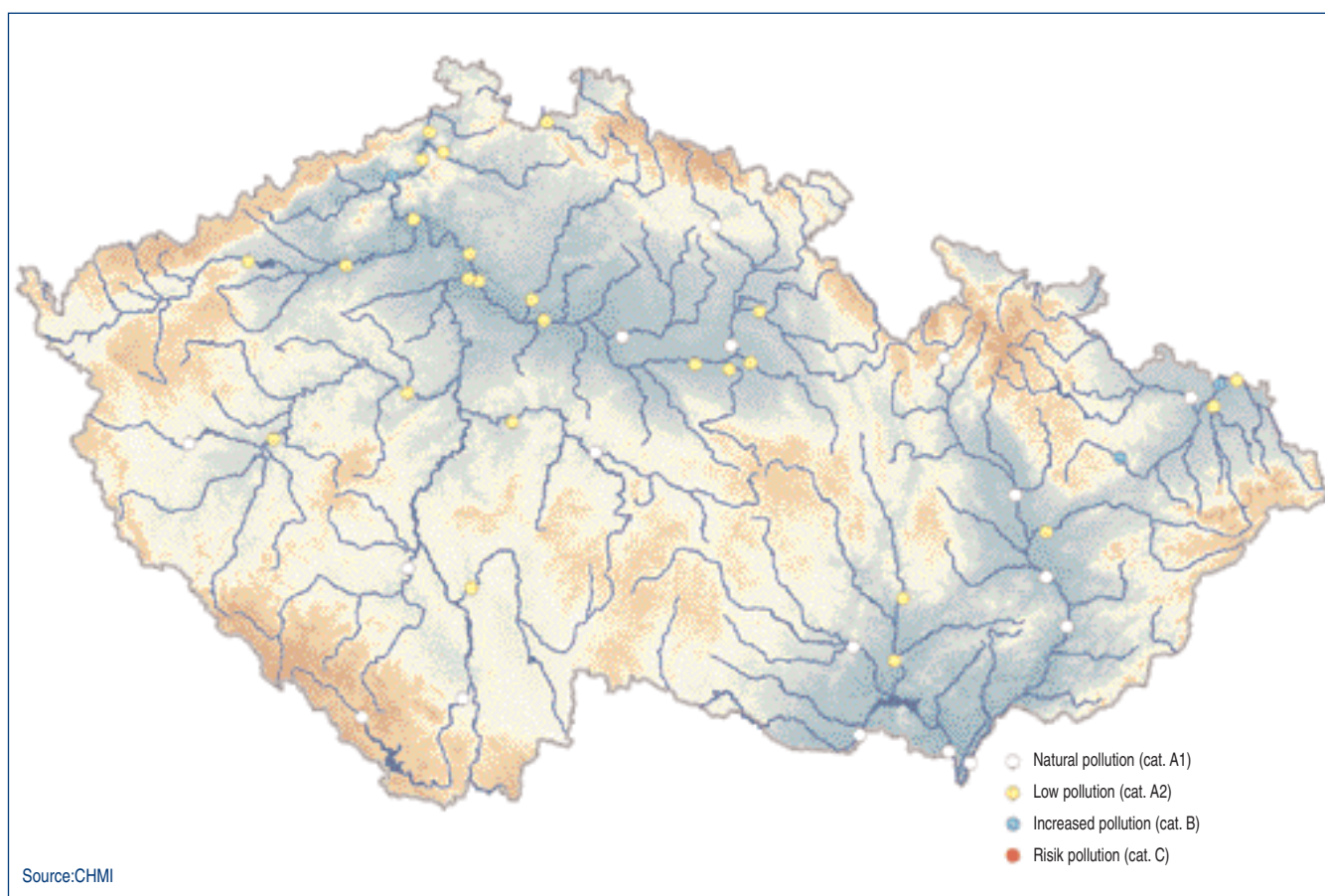
In the catchment area of the Upper Vltava only very few watercourses are significantly polluted by dangerous substances. The lower reaches of the Lužnice below Veselí nad Lužnicí contain an increased amount of mercury and aluminium, but PAH reached higher concentrations on the lower reaches of the Lužnice, Nežárka and at the mouth of the Otava. There were significant concentrations of bisphenol A, which is an endocrine active substance, in the Vltava below České Budějovice and in lower concentrations below Prague. Pesticides most frequently included alachlor and hexazinone in the Blanice, Volyňka and Otava.

In the catchment area of the Lower Vltava, higher concentrations of PAH were recorded in March and November in the Vltava. In the surroundings of Žďár nad Sázavou there were increased concentrations of volatile chlorinated hydrocarbons, trichloroethene and tetrachloroethane resulting from the industrial businesses in this section of the Sázava. The pesticides most frequently recorded were alachlor (Zákolanský Stream, Vltava

and Sázava), and atrazine, despite the fact that its use has been banned, was found in lower concentrations in the Bakovský Stream, the Zákolanský Stream and the Vltava. Amongst synthetic complex-formed substances, EDTA was measured in higher concentrations in the lower reaches of the Vltava and Sázava. Although PCB were only rarely found in waters, the Zákolanský Stream is one of the places where they were found.

In the Litavka in the catchment area of the Berounka there remains heavy pollution by metals as a result of mining activity and the discharge of mine water, but the surrounding industry and bedrock also play a role. In Trhové Dušnice, arsenic, cadmium, lead and zinc exceeded the permitted limits many times over, and the same pollution is also present to a lesser extent, although still over the limit of the imission standard, in the Litavka in Beroun. There was also an increased concentration of metal (aluminium, cobalt) in the Mže at Stříbro. It was the only profile in the catchment area of the Vltava where values of DEHP (phthalate) were measured above the level of determinability. The Úhlava was burdened in particular by the volatile chlorinated hydrocarbons tetrachloroethene and dichloroethene, and the concentration of PAH was higher. The most frequently detected pesticides were chlorpyrifos, atrazine and hexazinone (Litavka and Úhlava). In the Berounka this list also included alachlor, metolachlor, isoproturon and terbutylazine.

The accident in the Lučební závody Draslovka Kolín, a.s., in January 2006, when a high concentration of cyanides leaked into the Elbe and which resulted in the death of 10 tons of fish was not reflected in samples in the following months. The concentration did not exceed the normally recorded values from the preceding years, and they complied fully with the imission standard of 0,7 mg/l (order of the government No 61/2003 Coll.). High flows on the Elbe in March 2006 brought a many times greater increase in concentration of certain substances, in particular the metals aluminium, iron, lead and mercury, and also a broad range of PAH. Along the entire length of the Elbe increased values of AOX were measured. The most significant repre-

Picture 1.2.3 Burdening of wash-load by arsenic in 2006**Picture 1.2.4 Burdening of wash-load by mercury in 2006**

sensation of complex-form substances was EDTA, in the lower reaches, in Děčín higher concentrations were also measured for NTA and PDTA. The confluence with the Bílina, which is also highly polluted by these substances, also contributed to their increase. Below Ústí nad Labem, chlorinated prophyll ethers increased in the Elbe. The higher burden by toluene, ethylbenzene, naphthalene sulphonates, chlorobenzene and aniline in the Elbe was expressed below Pardubice. After the confluence with the Vltava, the concentration fell. Intense farming activity in the area around the Elbe resulted in an increase in the concentration of certain pesticides in small

dek nad Nisou the concentration was several times higher than the imission standard, and on this watercourse the pesticide lindane was recorded several times. In the catchment area of the Ohře the most heavily polluted river from the long-term aspect is the Bílina, even though its state is gradually improving. The values of certain substances were several times higher than imission standards. It was polluted in particular by aliphatic hydrocarbons, but increased levels of chlorobenzenes, chlorophenols, cresoles and naphthalene sulphonates were recorded. Out of the recorded PAH, the most significant one

There are long-term increased values for mercury on the entire catchment area of the Morava, and a very high concentration was ascertained in May in the Morava – Raškova. For other metals there were higher values in the Olšava in Havříce (aluminium, lead, cobalt, copper) and the Vlára in Brumov (aluminium). Compared with other catchment areas, a higher concentration was also detected for 2-chlorophenol, probably as a result of a different method of designation.

A more prominent pollution of the Morava is expressed under Kroměříž, in particular the concentrations of hexachlorobenzene and pentachlorobenzene are high. Chlorinated aliphatic hydrocarbons were ascertained in the Olšava, and chlorophenols and chlorobenzenes on the lower reaches of the Svitava. The spectrum of used and detected pesticides was broader than in the catchment area of the Vltava, and in particular there were urons, atrazine and MCP. High concentrations were measured on the Oskava, Bobrava and the Vlára. DEHP, used as a softener for plastics, was found above the level of determinability on the lower reaches of the Morava, the Bečva, Dyje, Olšava and Svratka.

In the catchment area of the Odra the profile most heavily burdened by metals was Odra – Bohumín, where there were significantly increased concentrations of mercury, aluminium and iron and slightly elevated concentrations of cadmium and lead. Cadmium above imission standard values was ascertained in the Bělá – Glucholazy, Zlatý Stream in Jarnoltovce and in the Ostravice in Ostrava. Chlorinated hydrocarbons, most frequently dichloroethene and tetrachloroethene, polluted the Olše below Třinec, the Ostravice – Ostrava and the Odra in Bohumín, where other dangerous substances were ascertained. In this area they have long been the profiles most heavily polluted by dangerous substances. Pesticides were designated only on a small number of profiles – the substances most frequently recorded were hexazinone, atrazine, desethylatrazine and terbutryne, and infrequently trifluralin. Substances with an endocrine influence were nonylphenol and octylphenol



Cidlina river, Nový svět

watercourses in the catchment area of the Elbe (Cidlina, Dědina, Orlice) and in the Elbe itself. Most frequently increased concentrations were measured for atrazine, isoproturon, terbuthylazine, metolachlorine, and lower ones for lindane. On the lower reaches of the Jizera in Bakova slight pollution by tetrachloroethene was discovered, there was only an occasional presence of other dangerous substances on the borderline of determinability. DEHP was detected along the entire length of the Elbe, in particular in Valy and Obříství, but it was also recorded in the Smědá, Úpa, Kamenice and Nisa, but it never exceeded the imission standard.

The river Nisa was heavily polluted by PAH, in particular in the profile Hrá-

is naphthalene. EDTA and NTA reached high concentrations in the mouth of the Bílina, and the Chomutovka is polluted with them in the same way. Along the entire length of the Bílina higher concentrations were also measured for lindane and chloropyrifos. The Teplický Stream and Ploučnice in Benešov above Ploučnice were also polluted by volatile organic substances. In the Svatava a high concentration of simazine was recorded. In the Ohře only a small quantity of dangerous substances was recorded in Jindřichov and in Louny, these were aliphatic chlorinated hydrocarbons. There was only an infrequent presence of pesticides in the entire watercourse.

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in values on the borderline of imission standards in all profiles in which they were measured on the Odra, the Opava and the Ostravice.

The floods which occurred in March 2006 were expressed markedly by a short-term increase in concentrations, in particular for the indicators of basic chemical pollution and metals. Out of the dangerous substances, this phenomena was recorded for PAH, but the increased flows only had a marginal effect on other substances.

In 2006 radioactive substances were monitored in 73 profiles of the state network. In surface water there was an analysis of the indicators of the total volume of alpha activity, total volume of beta activity, total volume of beta activity after 40^k correction, volume activity of radium 226 and concentration of natural uranium. In connection with the check on the influence of nuclear facilities, in selected profiles the volume activity of tritium was monitored.

From the results of the monitoring it is evident that the influence persists of the previous extraction of uranium ores in profiles below the mine water outlets and in the sections of flows influenced by leaching from spoil tips and settling ponds. In the area of the Příbram deposits, in the river Kocába in the Višňová profile, Dubenecký Stream in the profile Dubenec and Příbramský Stream in the profile Brod, increased values of radiological indicators were ascertained, the quality of surface water corresponds, pursuant to ČSN 75 7221, to quality class V – very heavily polluted water. Surface water in this quality class was also discovered along the current of the Kocába in the profile Štěchovice and in the Hadůvka in the profile Skryje, below the outlet of the mine Rožínka.

Values corresponding to water quality class IV – heavily polluted water – were ascertained in the river Loučka in the profile Boudy (near the mine Rožínka), in the Račí Stream in the profile Nekrasín and in the river Úhlava in the

profile Doudlevice. The quality of surface water in the Drásovské Stream in the profile Drásov (near Příbram) also corresponds to classification in class IV water quality. In contrast with the preceding year, in 2006 there was an increased concentration of uranium and overall volume activity beta after correction to 40^k in the surface water of this profile, but in comparison with the period 1990 – 2000 water quality improved by one quality class.

In the aforementioned profiles, pollution resulting from increased values of radiological indicators persists long term. There has been a significant improvement in the quality of surface water in comparison with the period 1990 – 2000, and in particular in the surface water of the Ploučnice and Nežárka.

On the basis of the monitoring of the content of the artificial radioactive substances in the river Jihlava below the waste water outlet from the nuclear power station Dukovany, in 2006 a volume activity of tritium was discovered in the range 67 – 206 Bq.l⁻¹. The maximum ascertained value represents 5.2 % of the imission standard for tritium in surface water courses given in government order No 61/2003 Coll. In the river Vltava in the profile Solenice below the waste water outlet from the nuclear power station Temelín in 2006 the volume activity of tritium did not exceed 20 Bq.l⁻¹, which is 0.5 % of the imission standard for tritium designated pursuant to the government order referred to. Other activation and fissile products created during the operation of nuclear power stations were not detected.

In 2006, in many reservoirs the process of water eutrophication

occurred, i.e., a process caused by an increased content of mineral nutrients, primarily compounds of phosphorous and nitrate in the water.

There were significant problems during the year in the water management reservoirs and water-supply reservoirs: Vrchlice, Hamry, Křižanovice, Seč, Lučina, Mariánské Lázně, Křimov, Landštejn, Boskovice, Nová Říše, Koryčany, Kružberk and in the non water management reservoirs: Pastviny, Harcov, Les Království, České Údolí, Hracholusky, Slapy, Orlík, Lipno, Baška, Vranov, Bystřička, Nové Mlýny-central reservoir, Křetínka, Luhačovice, Plumlov, Česká Třebová, Jevišovice and Brněnská reservoir. In the overall evaluation it is possible to state that the worsened water quality in 2006 was dealt with adequately from the operational aspect; there was no restriction on supplies of water to inhabitants. The water in the non water management reservoirs (for example Hracholusky, České Údolí, Plumlov, Harcov, Luhačovice, Brněnská reservoir, Slezská Harta and Baška) was less suitable or unsuitable for recreational purposes in the summer, and a temporary bathing ban was issued for several of them (Plumlov, Luhačovice, Brno Reservoir). The aerial liming performed over several years which has eliminated the negative influence of peaty water with low alkalinity and low pH has had a positive impact on water quality in the reservoir Souš.

The Agricultural Water Management Authority permanently ensures the monitoring system for ascertaining and evaluating the state of surface water, the aim of which is to ensure a constant increase in water quality.

Table 1.2.1
Definition of categories for evaluation of contents of dangerous substances in wash-loads and sediments

Criteria of MoE	Categorisation	Designation
Non-attainment of criteria A	natural (geogenous or very low) contents of monitored substances	A1
Exceeding of A Exceeding of B	Slight increase in burden Corresponds to increased contents, exceeding of criteria B is evaluated as pollution which may have a negative impact on human health and on the individual components of the environment	A2
Exceeding of C	Exceeding of criteria C represents pollution which can mean a significant risk of threat to human health and other components of the environment	B C

Source: MoE



In 2006 this monitoring was operated on profiles classified in six monitoring programmes meeting the requirements of state administration of the Czech Republic and the European Community (referred to hereinafter as the „EC“). Samples were taken on the administered watercourses as part of the monitoring programme for the state network of monitoring water quality (CHMI) and monitoring of point sources of pollution (PSP). Selected reservoirs were monitored under the programme of small reservoirs (SRES). In order to comply with the requirements of Council Directive 91/676/EEC (nitrate directive), nitrates (NIT), which represent pollution from agricultural sources, were monitored. In Autumn 2006, the Agricultural Water Management Authority (referred to hereinafter as the „AWMA“) joined in the European project TOPPS – protection of surface water from sources of pollution by pesticides – and performed pesti-

cide screening on 50 concluding nitrate profiles. The evaluation of the ecological state of waters was ensured by hydrobiological monitoring (BIO), which was allocated, in addition to the standard monitoring of macrozoobenthos, the trial monitoring of another two elements – phytobenthos and fry fish communities. In August 2006, on the profiles of the CHMI and the MVN there was a monitoring of the chemical state of sediments (SED) and the results from 2002 were thus verified. The financing of individual monitoring programmes was ensured by the Ministry of Agriculture (referred to hereinafter as the „MoA“).

As in preceding years, the AWMA participated in the preparatory work of monitoring for the purposes of directive 2000/60/EC (so-called Framework Directive), and in cooperation with all the authorised subjects (primarily the river board corporations) it prepared a draft for the network of profiles of

operational monitoring. In the course of the past year there has thus been a significant change in the monitoring network of both nitrate profiles according to the input information of T.G.M. Water Management Research Institute (referred to hereinafter as „T.G.M. WMRI“) and biotic profiles on the basis of the Framework Directive 2000/60/EC. In 2006 the AWMA monitoring system included 966 sampling points – 70 profiles of the CHMI, 247 profiles of PSP, 573 profiles of DUS and 76 profiles of reservoirs. The statistically evaluated results of monitoring are published on the internet pages of the AWMA www.zvhs.cz.

AWMA also cooperates in the area of the operation and concept of monitoring with river board corporations, the MoE, the Czech Hydrometeorological Institute (referred to hereinafter as „CHMI“), T.G.M. WMRI, Plant Production Research Institute, the Land Reclama-

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tion and Protection Research Institute (referred to hereinafter as „LRPRI“), the Faculty of Science of Masaryk University in Brno, the State Phytosanitary Administration and the Academy of Sciences of the Czech Republic.

The chemical state of the aquatic environment is evaluated from the quality of its solids matrices – wash-loads and sediments. In 2006 there was a qualitative monitoring of wash-loads and sediments on 45 profiles of main watercourses in the Czech Republic and their important tributaries.

The monitored indicators were the contents of 98 substances – heavy metals, metalloids and specific organic substances, including the priority pollutants given in the list of annex X of Directive 2000/60/EC of the date 23.10.2000 of the European Parliament and of the Council establishing a framework for the community action in the field of water policy. The specified substances were monitored with a frequency of 4 to 6 x year in wash-loads and 2 x year in sediments.

As in previous years, for the evaluation of the chemical state and evaluation of the development of the pollution of wash-loads and sediments, signal and comparative values A, B, C of the criteria of the Methodological Instruction of the department for ecological damage of the MoE „Criteria of Pollution of Soils and Groundwater“ from the year 1996, as amended by Methodological Instruction of the MoE for the analysis of risks of contaminated territory No 9/2005, was used. The exceeding of the criteria of category B of this norm is evaluated as increased pollution which could have a negative effect on the health of man and the individual components of the environment. The use of the specified norm makes it possible to preserve the continuity of evaluation with the preceding years.

No unified European norms are designated for the evaluation of pollution of solid matrices, in contrast with surface water. Environmental qualitative

standards are proposed for certain priority dangerous substances in sediments. The working draft has not yet been approved by the EC.

From a comparison of the measured data on a republic-wide scale it is evident that out of the total of 98 monitored substances, in the matrix of the wash-load there were values indicating increased pollution (criterion B) for benzo(a)pyrene (4.2 %), mercury (1.9 %), arsenic (0.9 %) and beryllium (0.9 %), occasionally for cadmium, copper, antimony, tetrachloroethene and phenol. The limit for risk pollution (criterion C) was exceeded most frequently in contents of arsenic (5 %) beryllium (0.9 %), lead (0.5 %), and out of organic substances for p-cresol (11.7 %), monochlorophenol (4 %) and occasionally chrome, benzo(a)pyrene and chlorophenol.

The type of substances in the above-the-limit contents in sediments is similar to that in wash-loads, only their frequency is lower over the long term. The value of criteria B was exceeded in particular for mercury (2.2 %) and occasionally for arsenic, beryllium, cadmium, antimony, and out of organic substances for toluene and benzene. Risk contents above the value of criteria C were ascertained for arsenic (7.6 %), toluene (3.3 %) and benzene (2.7 %), occasionally for lead, benzo(a)pyrene and p-cresol.

With regard to the preceding period (year 2005), a lower number of cases was recorded with increased and risk pollution by mercury and arsenic in wash-loads. The frequency of increased and risk contents of polyaromates and chlorophenols remains at a similar level. A more significant increase in the incidence of above-the-limit contents and their values was detected for p-cresol in wash-loads. In view of the fact that this is a substance also created by natural processes in nature, it is necessary to evaluate the tendency of the state from this aspect as well. One new feature was that above-the-limit contents of certain volatile substances were ascertained in sediments of the central flow of the Morava below Olomouc and in Spytihněv.

Overall it is possible to state that as in previous years, the contents of the moni-

tored polluting and dangerous substances correspond in most cases with the level of natural values (A1) or level of slightly increased pollution (A2). Only the maximum and high values of the set of profile data belong to the category of increased and risk pollution. The average values were mainly at the level of slight pollution (A2). Only in a few cases on the Bílina and Ohře was serious contamination ascertained, for example arsenic in all samples.

From the aspect of attaining a good state of surface water, according to the used norm it is possible to consider the still increased contents of arsenic and mercury in the Ohře and Bílina as unsatisfactory, as it is for broad-area pollution by cadmium, documenting persisting long-term contamination of the environment in spite of the current strict application of imission measures.

In conclusion it is necessary to state that the ascertained positive result of monitoring for 2006, especially in the matrix of wash-load, may represent an improvement in the imission situation, although this need not necessarily be the case. With regard to the limited frequency of sampling (from the original 16 samples per year reduced to 4 samples per year) as a result of cost-cutting measures in monitoring of water quality in 2006, it is necessary to approach optimistic findings with caution.

In 2006 the contamination of biomass by harmful substances in the state network for the monitoring of surface water quality was monitored at 19 conclusion profiles of main rivers of the Czech Republic.

Within the framework of accumulation biomonitoring there was an evaluation of caddis fly of the genus *Hydropsyche* (which were found to be a suitable group of benthic organisms for monitoring the accumulation of pollutants), and accumulation in clams (*Dreissena polymorpha*), in biofilm (growth) and fish (freshwater chub).

Out of the pollutants, heavy metals were analysed (lead, cadmium, mercury and arsenic), out of specific organic sub-

stances the indicator congeners of PCB (PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153, PCB-180, PCB-194) and chlorinated pesticides (p,p' isomers of DDT,DDD, DDE). For evaluation the organisms which best accumulate the individual pollutants were selected.

Chlorinated pesticides

Out of these substances, there was an evaluation of the isomers of p,p' DDT in fish (freshwater chub). In all the monitored profiles the isomer p,p' DDE displayed the maximum concentration. The highest values were measured in the Dyje in Pohansko (1 067 µg.kg⁻¹). In other monitored profiles the concentration ranged from 83 to 263 µg.kg⁻¹. In comparison with 2005 there was a reduction in the value on the Elbe in Obříství, and on the concluding profile of the Vltava – Zelčín.

Polychlorinated biphenyls

These substances were evaluated in the clams *Dreissena polymorpha*. High concentrations were measured in the Svatka below Brno (profile Židlochovice 146 µg.kg⁻¹, in the Vltava below Prague (profile Zelčín 112 µg.kg⁻¹), in the Bělina in Ústí nad Labem (112 µg.kg⁻¹) and in the Elbe in Děčín (96 µg.kg⁻¹). The lowest values were displayed by the profiles Morava – Lanžhot, Otava – Topělec, Sázava – Nespeky, Jihlava – Ivančice (41 – 44 µg.kg⁻¹). In 2005 the highest concentrations were measured on the Svatka in Židlochovice. Maximum concentrations were ascertained in benthic organisms on the profiles Ohře – Louny, Bělina – Ústí nad Labem and Svatka – Židlochovice (280 – 290 µg.kg⁻¹).

Heavy metals

The heaviest concentrations were measured in biofilm. A surprisingly high value for arsenic was ascertained in the Elbe in Lysá nad Labem (110 mg.kg⁻¹). In all other profiles there was a significantly lower concentration, and it was in a range from 5 to 32 mg.kg⁻¹. The maximum values were measured in the Lužická Nisa in Hrádek nad Nisou (76 mg.kg⁻¹). In Lysá nad Labem the concentration of arsenic was 23 mg.kg⁻¹. For cadmium and lead the maximum concentration was in Hrá-

dek nad Nisou in the Lužická Nisa (5.9 and 136 mg.kg⁻¹). The highest concentration of mercury was measured in growths in the Odra in Bohumín and on the Elbe in Děčín (1.4 and 0.8 mg.kg⁻¹).

Within the framework of biomonitoring, substances were also monitored which during an analysis of water are present in low concentrations and very often below the level of determinability of analytical methods. These are fat soluble substances, and it is therefore possible to anticipate their accumulation in organisms. As a result of accumulation monitoring it is evident that these pollutants are present in water ecosystems, very often in high concentrations. When assembling programmes for monitoring, in regard to the type of monitored pollutants it would also be appropriate to designate the type of matrix where the monitoring of concrete pollutants is expedient.

1.3 Quality of groundwater

In the state monitoring network for groundwater quality in 2006, 462 objects were monitored consisting of 138 springs (the monitoring of springs documents the natural drainage of groundwater, in particular in the area of the crystalline complex, and the local drainage of chalk structures), 147 shallow wells (the objects are primarily concentrated in the alluvial areas of the Elbe, Orlice, Jizera, Ohře, Dyje, Morava, Bečva, Odra and the Opava – this groundwater is highly vulnerable, with a high coefficient of filtration and rapid progress of pollution) and 177 deep wells (the objects are concentrated primarily in the areas of the Czech Chalk Basin, the České

Budějovice and the Třeboň Basin, and they monitor the deep circulation of groundwater – the direct vulnerability of this water is not that great, because contamination is expressed here after a long time).

A total of 150 indicators was designated here with a frequency of twice a year in spring and autumn. The analysis of specific substances associated with agriculture was performed only for the samples collected in the spring.

In view of the requirements of the Framework Water Directive, the evaluation of results of water quality for 2006 focussed in particular on dangerous substances. The CHMI measured values of groundwater quality indicators were compared with:

- values of determination limits,
- values of criteria A, B and C according to the methodological instruction of the MoE from 15.9.1996 „Criteria of Pollution of Soils and Groundwater“,
- limits for drinking water according to decree of MoA No 252/2004 Coll., which designates the requirements for drinking water and the scope and frequency of its checking (for indicators which do not have a limit designated in this decrees, the limit designated by the norm ČSN 75 7111 Drinking Water was used).

From the summary of results concerning the exceeding of criteria A, B and C it emerged that 20 indicators exceeded standard C at least once in 2006, and the greatest percentage exceeding was recorded in the indicator of chloride (4.2 % of all samples,

Table 1.3.1
Overview of number of objects with exceeding of criterion B, C at least in one indicator for 2006

Objects	Number of objects	Number of objects with exceeding of B or C	% of objects with exceeding of B or C
Shallow wells	147	62	42,2 (38,8 v r. 2005)
Deep wells and springs	315	53	16,8 (16,5 v r. 2005)
All objects	462	115	24,9 (23,6 v r. 2005)

Source: AWMA

9.0 % of samples of shallow wells), ammonium ions (3.2 % of all samples, 4.8 % of samples of shallow wells) and aluminium (1.9 % of all samples, without significant differences for individual types of objects).

Values are very rarely exceeded for 1,2-cis-dichloroethene (0.7 % of all samples) and tetrachloroethene (0.5 % of all samples). The other 15 indicators (pesticides, volatile organic substances and metals) exceeded criteria C highly sporadically (0.1 to 0.4 % of all samples).

Values measured above criterion B and below criterion C were ascertained in 22 substances, of which the highest percentage representation consists of chlorides (3.7 % of all samples, 9.0 % of samples of shallow wells), ammonium ions (3.2 % of all samples, 5.5 % of samples of shallow wells), boron (2.9 % of all samples, 3.3 % of samples of deep wells and springs), and aluminium (1.9 % of all samples, 2.8 % of samples of shallow wells), and there was also a sporadic presence of nitrates, fluorides, beryllium, chrysenes, benzo(b)fluoranthene, 1,2-cis-dichloroethene, nickel, vanadium, arsenic, total chrome, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, trichloroethene, fluazifop-p-butyl, metalochlorine and chlorotolurone.

Overall the incidence of indicators exceeding the values of criteria B and C is most frequent in groundwater of shallow wells, oriented towards the alluvial areas of rivers which have the greatest anthropogenic influence. From the aspect of comparing the quality indicators against 2005, which is given in Table 1.3.1, it is possible to state that in shallow wells there was a slight worsening, and in the group of objects of deep wells and springs there was only a slight worsening in the percentage representation of objects with an exceeding of the values of criterion B or C. The list of indicators present in concentrations exceeding the values of criterion B and C has not changed significantly in recent years.



Jizera river, Malá Skála

From the aspect of comparing the quality indicators for groundwater with the requirements for drinking water, the most frequently discovered indicators in above-the-limit values were nitrates (12.7 % of above-the-limit samples), dissolved organic carbon – DOC (11.1 % of above-the-limit samples), ammonium ions (10.7 % of above-the-limit samples), chemical consumption of oxygen by permanganate (9.0 % of above-the-limit samples), sulphates (8.5 % of above-the-limit samples) chlorides (8.0 % of above-the-limit samples), aluminium (4.1 % of above-the-limit samples), nickel (3.4 % of above-the-limit samples), and benzo(a)pyrene (2.4 % of above-the-limit samples). Less frequently these limits were exceeded in the indicators of arsenic (2.1 % of above-the-limit samples), fluorides (2.3 % of above-the-limit samples), atrazine (2.1 % of above-the-limit samples), desethylatrazine (2.6 % of above-the-limit samples). All these above-the-limit substances (apart from fluorides) are represented by a greater proportion in the groundwater of shallow wells.

In view of the requirements for drinking water, virtually the same scope of substances of the basic composition of water in above-the-limit concentrations persisted in comparison with 2005. The incidence of organic dangerous substances in above-the-limit concentrations is also comparable with 2005.

Overall one may sum up that the most significant indicator of groundwater pollution was seen to be nitrogenous substances (in particular nitrates and ammonium ions), chlorides and metals (in particular aluminium). Organic substances contribute less to the pollution of groundwater, and they are represented to the greatest extent by volatile organic substances, which were discovered in the groundwater of shallow wells, especially in the area of Neratovice. The incidence of polyaromatic hydrocarbons, the incidence of which was reduced and which were found in higher concentrations only in the locality of Krnov, was less significant.



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2

2.1 Abstractions of surface water

The year-on-year drop in surface water abstractions in comparison with 2005 virtually halted, because expressed as a proportion the drop did not come to even one quarter of a percentage point. In 2006, a total of 1 556.9 million m³ of surface water was abstracted. As in the previous two years, as a result of unification of data of the individual River Boards, state enterprises, abstractions of surface water do not include transfers of water and water abstracted for fishpond systems.

There was only a significant reduction in abstractions in the category of industrial abstractions, which was almost 17 million m³, but this was balanced by an increase in surface water abstractions in

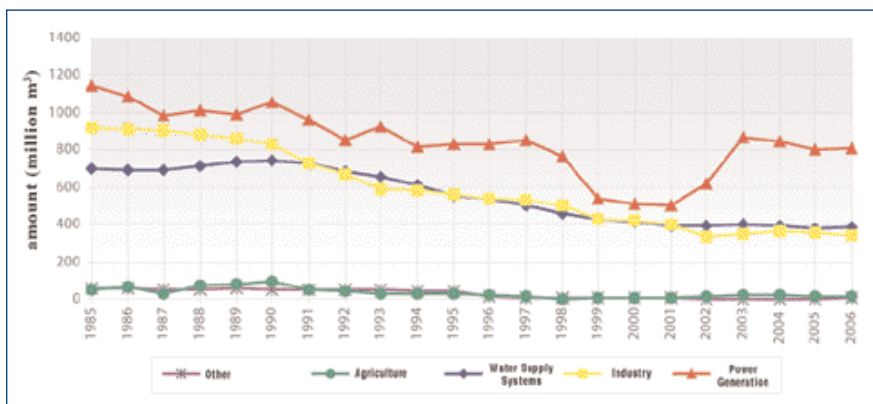


More detailed information about specified BRANCHES:

Water supply	Public water supply and sewerage systems	BCEA: 41 and 90, without 410010
Agriculture	Agriculture without fish farming	BCEA: 01 – 05, bez 050200
Power generation	Generation and distribution of electricity and heat	BCEA: 401 and 403
Industry	Industry – without electricity generation and water supply	BCEA: 10 – 45, without 401, 403 and 41
Other	Other activities – without public sewerage systems	BCEA: 50 – 93, without 90
Total	Total data (without fishponds and transfers)	BCEA: 01 – 93, without 050200 and 410010

Graph 2.1.1.

Abstractions of surface water in Czech Republic in 1985 – 2006



Source: MoA

other groups of users. Abstractions increased in particular for the production of drinking water, i.e., in the category of water supply systems, where in absolute values in comparison with the preceding year there was a year-on-year growth exceeding 10 million m³. The growth in other categories of users, i.e., agriculture, power generation and other use, was less significant (in absolute expression it was up to 5 million m³).

The structure of recorded water abstractions in the individual catchment areas in 2006 is given in Table 2.1.1. The total development of surface water abstractions since 1985 is shown by Graph 2.1.1.

The classification of users into individual groups is according to the instructions of the Czech Statistical Office (referred to hereinafter as the „CSO“) designated according to the economic activity

Table 2.1.1

Abstractions of surface water in 2006 in millions m³ for consumers above 6 000 m³/year or 500 m³/month

River Boards, s.e.	Group of users											
	Water supply systems		Agriculture		Power generation		Industry		Other		Total	
	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number
Elbe River Board, s.e.	46,60	34	9,20	37	586,40	12	121,23	104	0,40	23	763,83	210
Vltava River Board, s.e.	164,40	49	1,00	12	54,50	16	49,76	85	3,30	24	272,96	186
Ohře River Board, s.e.	55,60	23	0,40	19	55,60	5	53,42	64	0,10	6	165,12	117
Odra River Board, s.e.	79,20	16	0	0	6,10	1	91,33	65	0,90	38	177,53	120
Morava River Board, s.e.	42,08	36	3,16	27	106,58	2	25,49	120	0,18	11	177,49	196
Czech Republic	387,88	158	13,76	95	809,18	36	341,23	438	4,88	102	1 556,93	829

Source: MoA, River Boards, s.e.

branch classification (referred to hereinafter as „NACE“). In the following overview there is more detailed information about the classification of abstractions and discharges into concrete groups of users on the basis of the NACE classification.

2.2 Abstractions of groundwater

The overall amount of abstracted groundwater in comparison with 2005 fell by 1.3 %, which indicates that the increase in the rate of drop in this category of abstractions reached its maximum in the previous periods and is now tending to stagnate.

There was a certain turning point in the development trends, where there was a continuous drop in 2006, there was a slight increase in all categories of users with the exception of water supply sys-

tems, where the drop in abstractions caused an overall drop in groundwater abstractions. From the preceding subchapter 2.1 it is evident that this involves a shift of water supply systems from the category of groundwater abstractions in favour of surface water abstractions.

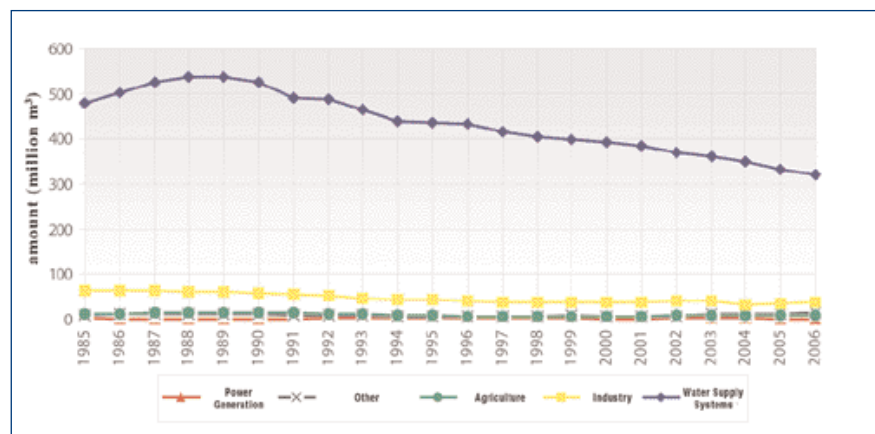
The structure of recorded abstractions of water in the individual river board

corporations in 2006 is expressed in Table 2.2.1. In 2006, 3851 abstractions of groundwater were recorded with an amount of 379.35 million m³. These were abstractions in excess of 6 000 m³ per year, or 500 m³ per month.

Although there was a slight reduction in the overall amount of abstracted groundwater, the total number of

Graph 2.2.1

Abstractions of groundwater in the CR in 1985 – 2006



Source: MoA

Table 2.2.1

Abstractions of surface water in 2006 in millions m³ for consumers above 6 000 m³/year or 500 m³/month

River Boards, s.e.	Group of users											
	Water supply systems		Agriculture		Power generation		Industry		Other		Total	
	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number
Elbe River Board, s.e.	100,20	670	1,80	121	0,80	5	9,30	155	1,70	48	113,80	999
Vltava River Board, s.e.	33,70	539	3,30	224	0,20	6	10,30	124	5,90	225	53,40	1 118
Ohře River Board, s.e.	48,90	318	0,50	19	0,30	1	6,40	95	2,10	12	58,20	445
Odra River Board, s.e.	20,30	131	0,50	24	0	0	1,70	37	0,60	27	23,10	219
Morava River Board, s.e.	116,41	606	3,66	218	0	0	8,74	159	2,04	87	130,85	1 070
Czech Republic	319,51	2 264	9,76	606	1,30	12	36,44	570	12,34	399	379,35	3 851

Source: MoA, River Boards, s.e.



Skálická Morávka river

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abstractions for all river board corporations increased markedly.

2.3 Discharges of waste and mine water

In 2006, 2 024.14 million m³ of waste and mine water was dis-

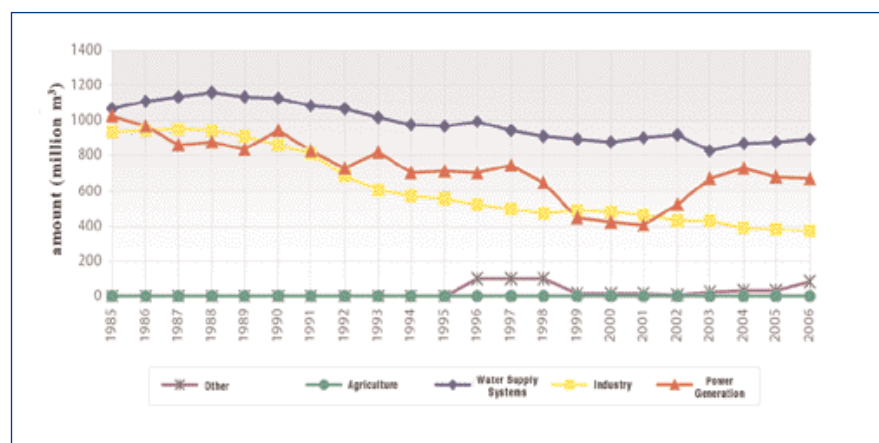
charged into rivers. In contrast with 2005, when a drop was reported in the discharge of water, in 2006 there was a slight increase by 2.7%, and there was thus a balancing of the total amount of discharged water to the level of 2004. As a result of the standardisation of

data of the individual river board corporations, transfers of water are not included in discharged waste and mine water.

Increases were recorded in particular in the category of other users and sewers, which is associated primarily with the connection of other objects and inhabitants to the public sewer network. The greatest reduction was noted in the generation and distribution of electricity, gas, steam and hot water, which also contributed to the greatest reduction last year.

In 2006 there were 3970 recorded discharges of waste and mine water into surface water in a total volume of approximately 2025 million m³. These were sources in excess of 6 000 m³ per year or 500 m³ per month. As a result of the standardisation of data from the individual river board corporations, transfers of water are not recorded in the records.

Graph 2.3.1
Discharge into surface water in the Czech Republic in 1980 – 2006



Source: MoA

Table 2.3.1
Discharges of waste and mine water into surface water in 2006 in million m³ for sources above 6 000 m³/year or 500 m³/month

River Boards, s.e.	Group of users											
	Water supply systems		Agriculture		Power generation		Industry		Other		Total	
	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number	Amount	Number
Elbe River Board, s.e.	184,00	491	0	0	553,90	20	113,70	207	1,30	41	852,90	759
Vltava River Board, s.e.	289,30	606	1,30	7	20,00	19	62,30	167	16,20	450	389,10	1 249
Ohře River Board, s.e.	81,20	259	0	0	16,90	14	121,70	164	27,20	25	247,00	462
Odra River Board, s.e.	124,50	303	0	0	2,30	1	45,30	48	33,50	119	205,60	471
Morava River Board, s.e.	219,80	810	0,09	2	75,81	2	29,94	175	3,90	40	329,54	1 029
Czech Republic	898,80	2 469	1,39	9	668,91	56	372,94	761	82,10	675	2 024,14	3 970

Source: MoA, River Boards, s.e.





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3.1 Professional administration of watercourses

Depending on their importance, watercourses in the Czech Republic are divided into significant watercourses and small watercourses. In 2006 watercourses were professionally managed in compliance with the provisions of section 47 of Act No 254/2001 Coll., concerning water and concerning the amendment of certain acts (the water act), as subsequently amended.

The decisive administrators of watercourses continue to be River Boards, s.e., the AWMA and Forests of the CR, s.e. in the competence of the MoA, which ensures the administration of approximately 94.5 % of the length of watercourses in the Czech Republic. The Ministry of Defence (referred to hereinafter as the „MOD“), administration of national parks and other natural and legal persons contribute approximately 5.5 % to the administration of watercourses.

Changes in the definition of significant watercourses are occurring on an ongoing basis, certain watercourses are being transferred from the administration of River Boards, s.e. to the administration of AWMA, Forests of the CR, s.e. and vice versa. According to the decree No 470/2001 Coll., certain spring sections and border watercourses originally recorded as small watercourses are categorised into the category of significant watercourses, or certain significant watercourses are transferred to the group of small watercourses. These transfers are documented according to the individual administrators of watercourses in Table 3.1.1.

Table 3.1.1
Professional administration of
watercourses

Category	Administrator	Length of watercourses in km	
		2005	2006
Significant watercourses	Elbe River Board, s.e.	3 560,10	3 560,10
	Vltava River Board, s.e.	4 761,10	4 761,10
	Ohře River Board, s.e.	2 290,81	2 290,81
	Odra River Board, s.e.	1 111,39	1 111,39
	Morava River Board, s.e.	3 814,55	3 812,68
	Total significant watercourses	15 537,95	15 536,08
Small watercourses	AWMA	35 649,49	35 700,36
	Forests of the CR, s.e.	19 609,73	19 535,94
	Total River Boards, s.e.	1 390,87	1 380,07
	Other *)	3 811,96	3 847,55
	Total small watercourses	60 462,05	60 463,92
Total watercourses		76 000,00	76 000,00

Source: MoA

Note: *) Includes Ministry of Defence, administration of National Parks, and other natural and legal persons.

The concrete list of significant watercourses is given in decree No 470/2001 Coll., which designates the list of significant watercourses and method of performing activities associated with the administration of watercourses, as amended by decree No 267/2005 Coll., which became valid as of 1.7.2005. This is an overview of 814 watercourses included on the „List of Significant Watercourses“, which constitutes annex No 1 to the decree referred to. One part of the list is the already used new identifier of significant watercourses (CRWC), which replaces the identifier HEIS used hitherto.

All other watercourses (provisions of section 43 of the Water Act) are small watercourses. The administration of small watercourses is performed in the sense of the provisions of section 48 of the Water Act. The administration of these small watercourses is performed on the basis of the relevant designation of the MoA (provisions of section 48 paragraph 2 of the Water Act). If the administration of a small watercourse is not designated, it is administered pursuant to the provisions of section 48 paragraph 4) of the Water

Act by the administrator of the recipient into which the small watercourse flows. This administrator performs administration until such time as a designation is issued for the administration of the watercourse pursuant to section 48 paragraph 2) of the Water Act. These cases are dealt with individually with regard to the fact of who this small watercourse serves.

More detailed information not only about the designation of administrator of the relevant watercourse is part of the „Records of Watercourses“, which is accessible in the portal PAIS – WATER, i.e., www.voda.mze.cz or www.voda.env.cz.

The book value of tangible fixed assets associated with watercourses records a year-on-year increase of almost CZK 1 billion, and in 2006 these assets reached a value of CZK 46.8 billion.

The year-on-year increase expresses primarily increases in tangible fixed assets (referred to hereinafter as „TFA“) gained through renewal and planned development in the area of entrusted assets in the form of regular investment construction and ongoing inclusion of received assets and completed waterworks. In 2006 no waterworks which could significantly

Table 3.1.2
Book value of tangible fixed assets
associated with watercourses in
billions CZK

Administrators of watercourses in competence of MoA	2005	2006
Elbe River Board, s.e.	8,37	8,46
Vltava River Board, s.e.	7,39	7,51
Ohře River Board, s.e.	7,76	7,90
Odra River Board, s.e.	4,90	4,90
Morava River Board, s.e.	6,73	6,85
Total River Boards, s.e.	35,15	35,62
AWMA	8,38	8,61
Forests of the CR, s.e.	2,35	2,56
Total	45,88	46,79

Source: MoA

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influence the indicator expressing the book value of tangible fixed assets were completed, granted permission for use and put into operation by any of the administrators of watercourses. Concrete values of TFA in book values for the individual watercourse administrators with year-on-year development (increases in TFA) are given by Table 3.1.2.

In 2006, new deeds of foundation of all River Boards, state enterprises were issued by the founder. In connection with the performed update of the deeds of foundation, there was also an update of the previous statutes of the Elbe River Board, state enterprise and the Odra River Board, state enterprise.

The MoA exercises on behalf of the state the function of founder of River Boards, s.e. in the sense of the relevant legal regulations, specifically pursuant to section 1 paragraph 4 of Act No 305/2000 Coll., Concerning River Boards, s.e., and pursuant to the provisions of section 4 paragraph 1 of Act No 77/1997 Coll., Concerning State Enterprise, as amended, and thus bears responsibility for ensuring the agreement of the relevant documents of foundation, deeds of foundation or statutes of River Boards, s.e. with subsequently occurring facts. The regular updating of the deeds of foundations and statutes of River Boards, s.e. is mainly carried out in connection with changes in legislation in the area of water management, the personnel composition of the relevant supervisory boards, change in position of statutory body or change of representative of statutory body, expansion or other change of designated subject of trading, personnel or organisational changes on the part of the MoA etc.

In the course of 2006 there were changes in all the deeds of foundation and some of the statutes of River Boards, s.e., in particular as a result of a change in the number of members and the personnel on their supervisory boards. The number of members of the supervisory boards was stabilised at six for River Boards, s.e. of the Vltava,

Ohře, Odra and Morava, and for River Board, s.e. of the Elbe it was designated as nine. And so the fundamental rule is preserved that two thirds of the supervisory board is appointed by the founder (the MoA), and one third is elected by the employees of River Boards, s.e. Changes in the number of members of the supervisory boards were expressed in particular for the Ohře River Board, s.e. and the Elbe River Board, s.e. which had five and six members of the supervisory board respectively. This fact was reflected in the statutes of both of River Boards, s.e. referred to.

The supervision activity of the individual River Boards, state enterprises and the AWMA is performed by the relevant inspection bodies. In 2006 the following comprehensive and tightly focussed inspections were carried out for River Boards, state enterprises and the AWMA with these results:

Supreme Audit Office

In 2006 no inspection on any of River Boards, s.e. was performed by this body.

Ministry of Agriculture

As in previous years, the Water Management Programme Financing Department carried out in particular inspections of the fulfilment of conditions and drawing of financial resources in the context of the individual programmes of „Flood Prevention. In this year a total of five of these inspections were performed, specifically at the Elbe, Odra and Morava River Board, s.e. No fundamental faults were detected during these inspections.

Inland revenue offices

In 2006 these bodies of state administration performed a total of 10 financial inspections focussing on adherence to budget rules and discipline in River Board, s.e. Vltava, Elbe and Morava. No faults were detected during these inspections.

Czech Social Security Administration

In 2006, the district branches of these institutions performed a total of

11 inspections on insurance premiums, the performance of sick-pay insurance and the performance of tasks in pension insurance in all of River Boards, s.e. No serious faults were detected during these inspections.

General Health Insurance Company

The duty of the employer in the field of paying of premiums for health insurance was reviewed after one inspection at River Boards, s.e. Elbe, Odra and Morava. No shortcomings were discovered on the basis of this investigation.

Regional hygiene station

Inspections were performed from the part of Regional Hygiene Stations on the exercise of state health supervision in the area of adherence to regulations for the protection of public health. A total of 15 inspection investigations were performed on River Boards, s.e. Ohře, Odra and Morava. The largest number of these inspections was performed on River Boards, s.e. Ohře and Morava. No faults were discovered during these investigations.

Safety at Work Inspectorate and Trade Union of Timber Processing, Forestry and Water Management Workers of the Czech Republic

Along with the Trade Union of Timber Processing, Forestry and Water Management Workers of the Czech Republic, the Safety at Work Inspectorate performed five inspections of River Boards, s.e. Elbe, Ohře and Morava focussing on adherence to safety work regulations. No serious errors were discovered on the basis of these investigations.

Inspections performed by other bodies of state administration

The Ministry of Transport (referred to hereinafter as the „MoT“) performed 17 inspections of the Elbe River Board, s.e. focussing on checking of working procedures, checking tenders and the utilisation of financial resources. The Ostrava City Council also performed two similar investigations of the Odra River Board, s.e. focussing on an investigation into the utilisation of

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provided investment grants used for the construction of flood-prevention measures. The customs and excise office performed financial investigations of the Vltava and Elbe River Boards, s.e. The State Nuclear Safety Office and Office for Technical Standardisation, Metrology and State Testing performed two technical inspections of the Ohře River Board, s.e. focussing on adherence to conditions for nuclear safety and verification of authorisation for the performance of official measuring. For most of the completed inspections no serious shortcomings were ascertained, and the minor shortcomings found were then operatively eliminated.

Inspection activity for the Agricultural Water Management Administration is performed by the relevant control bodies. In 2006 the following comprehensive and tightly focused inspections were performed.

Ministry of Agriculture

The Department of Programme Financing in Water Management performed ongoing public-sector site inspections on AWMA in the sense of section 13, paragraph 1 of Act No 320/2001 Coll. The subject of control was the verification of the use of financial resources for events paid for within the framework of the sub-programmes 229 062, 229 013 and for regular maintenance of small watercourses, reservoirs and main drainage facilities (referred to hereinafter as the „MDF“). Within the context of the inspections, no faults were discovered, and there was no breach of the criteria of Binding Rules for the provision of financial resources in the field of water in 2006 and the method of supervising its use and the conditions of utilising the costs of the state budget shown in annex No 2 to the Decision. A total of 15 events were inspected.

General Health Insurance Company of the Czech Republic and employee insurance companies

Inspections were performed on payments of insurance premiums for public

health insurance and adherence to other duties at the head office of AWMA and AWMA – area of Elbe river board. No shortcomings were detected during inspections.

Czech Social Security Administration

Inspections were performed on insurance premiums, sick pay insurance and the performance of duties in pension insurance for AWMA – area of Vltava, Ohře, Morava and Dyje river board. No serious shortcomings were detected during inspections.

The year-on-year increase of overall revenues of River board, s.e. was influenced by the increase in yields for the abstraction of surface water by more than CZK 150 million, which corresponds to a year-on-year increase by 6.5 % and for the generation of electricity with a year-on-year increase in absolute terms representing almost CZK 25 million (growth exceeding 7 %). Other revenue items were not so striking, because the greatest part of overall yields continues to consist of payments for the abstraction of surface water, which is the most impor-



Tichá Orlice river, Kerhartice

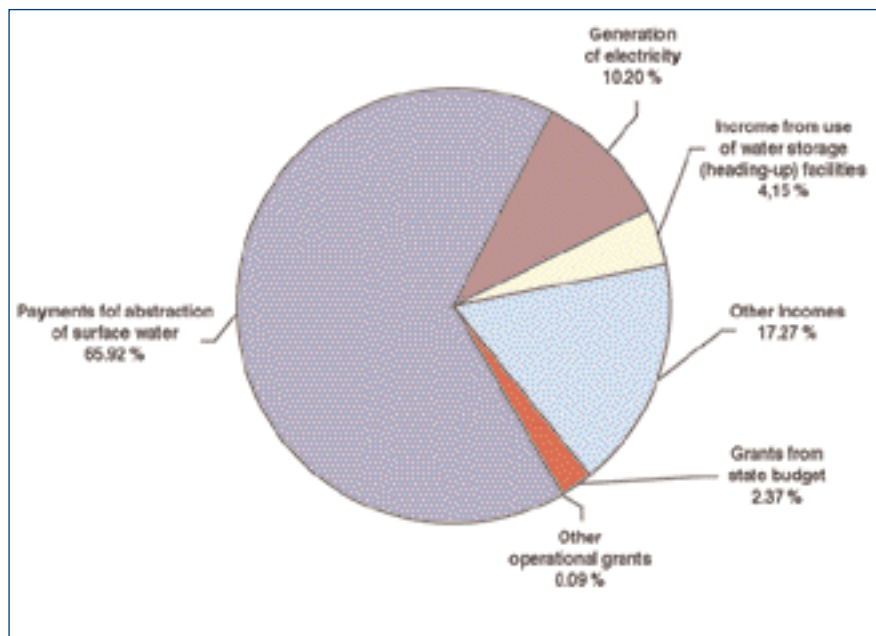
3. 2 River Boards, s.e.

In 2006 the overall yields of River Boards, state enterprises displayed a year-on-year increase by 2.2 %. After the elimination of operational grants, which fall every year with the gradual elimination of flood damages, from revenues and other yields, yields achieved a year-on-year increase of 15.5 % in comparison with.

tant source of revenues for paying the costs of watercourse administration. Their year-on-year growth has exceeded by five times the preceding increase between the years 2004 and 2005, which was CZK 30 million, and now in absolute terms exceeds CZK 152 million. The proportion of payments for the abstraction of surface water out of overall revenues in comparison with 2005 is increasing slightly and reaches almost 66 %. In 2006 this changed the overall trend of the constant drop in revenues for the

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Graph 3.2.1
Structure of yields of River Boards, s.e. in 2006



Source: MoA

Table 3.2.1
Structure of yields of River Boards, s.e. in 2006 in thous. CZK

Indicator	Elbe River Board, s.e.	Vltava River Board, s.e.	Ohře River Board, s.e.	Odra River Board, s.e.	Morava River Board, s.e.	Total River Boards, s.e.
Payments for abstraction of surface water	678 160	546 669	433 941	433 391	393 667	2 485 828
Generation of electricity	31 873	126 279	167 066	35 033	24 394	384 645
Income from use of water storage (heading-up) facilities	13 896	134 570	3 128	0	4 956	156 550
Other incomes	162 043	304 594	80 937	41 780	61 959	651 313
Grants from state budget	124	10 934	0	0	78 311	89 369
Other operational grants	47	432	0	0	2 960	3 439
Total River Boards, s.e.	886 143	1 123 478	685 072	510 204	566 247	3 771 144

Source: MoE, River Boards, s.e.

Table 3.2.2
Deliveries of surface water for payment in the years 1999 – 2006 in thous. m³

River Boards s.e.	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e. a)	572 341	534 300	508 435	571 365	803 416	815 491	777 041	748 522
b)	45 137	43 630	43 279	41 618	36 334	39 182	39 818	46 518
Vltava River Board, s.e. a)	294 550	276 626	264 802	266 916	286 889	274 084	262 532	263 685
b)	192 786	185 072	171 924	167 878	173 773	163 896	160 483	161 528
Ohře River Board, s.e. a)	190 731	176 183	176 403	169 092	170 975	162 934	155 315	161 071
b)	67 185	63 206	60 263	57 807	58 951	57 033	53 644	55 385
Odra River Board, s.e. a)	182 515	175 883	166 799	173 275	172 795	163 874	165 044	171 301
b)	72 108	69 434	66 255	72 167	74 183	70 729	72 682	75 001
Morava River Board, s.e. a)	156 247	141 902	132 680	135 366	165 653	145 185	154 770	162 336
b)	36 499	38 768	39 398	38 112	38 256	36 969	34 953	34 128
Total River Boards, s.e. a)	1 396 384	1 304 894	1 249 119	1 316 014	1 599 728	1 561 568	1 574 702	1 506 915
b)	413 715	400 110	381 119	377 582	381 497	367 809	361 580	372 560

Source: River Boards, s.e.

Note.: a) for payment total,
b) of this, for water supply systems for public use.

Table 3.2.3
Price for abstractions for flow cooling in the years 1997 – 2006 CZK/m³

River Boards, s.e.	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	0,45	0,53	0,61	0,67	0,67	0,65	0,39	0,40	0,40	0,40
Vltava River Board, s.e.	0,51	0,55	0,70	0,76	0,81	0,86	0,91	0,92	0,93	0,94
Morava River Board, s.e.	0,46	0,49	0,53	0,56	0,60	0,53	0,41	0,49	0,54	0,56

Source: River Boards, s.e.

Note: The unit price per m³ is given without value added tax.

abstraction of surface water within the context of the proportion of overall revenues, and the drop was replaced by an increase of 2.7 %. For several years these revenues have been displaying a constant growth in absolute volume, despite there being a drop in overall abstractions in technical units, which in contrast demonstrate an ongoing drop. Year on year this drop is 7787 thousand m³, although overall revenues have increased by more than CZK 152 million.

The proportion of grants out of the overall revenues has been falling every year since 2003, when they represented more than 36 % of overall yields, but now grants from the state budget, including other operating grants, are somewhat less than 2.5 % of overall revenues. This drop is associated with the run-down in activities caused by the accelerated reconstruction and renewal of water management assets following extensive floods, in particular in 2002. This extraordinary form of help will continue to fall because a great part of the grant titles will be reallocated to investment long-term events and will not be expressed as a part of the revenues from the title of operating grants. The generation of electricity, which ensured a total of almost CZK 385 million crowns of revenues for the River board, s.e., also contributed to increasing revenues. These revenues grew year on year by more than CZK 25 million. The overall drop in the grants referred to by more than CZK 393 million balanced the other revenues of the state corporations in which not only revenues from other business activities were reflected, but also financial revenues, including extraordinary revenues and yields.

The structure of yields of River Boards, s.e. in 2006 is expressed in Table 3.2.1. Graph 3.2.1 clearly shows the proportion of the individual types of revenues out of the overall yields of River Boards, s.e.

The development of overall deliveries of surface water for payment in technical units over the longer timescale is given in Table 3.2.2. The prices for the individual types of abstractions of surface water are given in Tables 3.2.3 and 3.2.4. Payments for abstractions of surface water

over a ten-year period are given by Table 3.2.5.

The prices of surface water in the context of other abstractions grew by almost 2 %, which in comparison with the preceding year represent a year-on-year reduction in the rate of growth by 0.9 %. These are materially directed prices in which it is possible to include only economically justifiable costs, reasonable profit and tax according to the relevant tax regulations.

In addition to flow cooling and other abstractions, since 2003 the levels of abstractions and price of surface water for the purposes of agricultural irrigation and flooding of artificial terrain hollows were also ascertained. With the exception of the Odra River Board, s.e., in 2006 abstractions for the purposes of agricultural irrigation were made in the total scope of 1 503 thousand m³, which as a total for all state corporations represents a year-on-year increase for all River Boards, s.e. by 342 thousand m³. The Vltava River Board, s.e. had the largest proportion of this increase, and its abstractions in 2006 represented 947 thousand m³ in this category of extractions. The Elbe River Board, s.e. also displayed a slight increase, whereas the Ohře River Board, s.e. and Morava River Board, s.e. recorded a drop in this category. abstractions of surface water for flooding of artificial terrain hollows occurred only in the Ohře River Board, s.e., and once again there was a year-on-year increase by 675 thousand m³ to 4 558 thousand m³.

The current prices in the current conception do not express the value of surface water, but the price of the service – i.e., allowing deliveries which River Boards, s.e. ensure for water users. These prices are subject to regulation in the form of material direction pursuant to Act No 526/1990 Coll., the Act Concerning Prices and Rules Designated by the Decisions of the Ministry of Finance (referred to hereinafter as the „MoF“) Concerning the Regulation of Prices, i.e., by the relevant assessments, by

Table 3.2.4

Price for other abstractions of surface water in the years 1997 – 2006 in CZK/m³

River Boards, s.e.	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	0,99	1,16	1,39	1,54	1,71	1,88	2,04	2,20	2,35	2,51
Vltava River Board, s.e.	1,03	1,15	1,41	1,55	1,65	1,70	1,79	1,90	2,00	2,11
Ohře River Board, s.e.	1,52	1,67	1,87	1,99	2,11	2,23	2,33	2,41	2,53	2,71
Odra River Board, s.e.	1,18	1,40	1,59	1,74	1,80	2,01	2,08	2,12	2,40	2,53
Morava River Board, s.e.	1,92	2,10	2,27	2,53	2,66	2,89	3,06	3,12	3,26	3,49
Average price River Boards, s.e.	1,24	1,39	1,59	1,76	1,90	2,10	2,23	2,44	2,42	2,56

Source: River Boards, s.e., WMRI T.G.M.

Note: The unit price per m³ is given without value added tax.
Calculated by weighted average.

Table 3.2.5

Payments for abstraction of surface water in the years 1996 – 2006 in million CZK

River Bords, s.e.	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	448	548	556	530	532	536	566	613	669	669	678
Vltava River Board, s.e.	337	345	357	383	401	408	438	495	508	513	547
Ohře River Board, s.e.	323	343	368	375	367	397	399	427	420	393 *)	434 *)
Odra River Board, s.e.	221	255	273	279	294	301	347	359	347	396	433
Morava River Board, s.e.	266	273	264	266	277	287	300	368	359	362	394
Total River Boards, s.e.	1 595	1 764	1 818	1 833	1 871	1 929	2 050	2 262	2 303	2 333	2 486

Source: River Boards, s.e.

Note: *) Since 2005 without revenues for transport and pumping of water.

Table 3.2.6

Own small hydroelectric power stations of River Boards, s.e. in the years 2001 – 2006

River Boards, s.e.	Indikator	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	Number of SHEP	15	15	17	17	17	19
	Installed capacity in kW	2 711	2 677	4 876	4 876	4 876	5 217
	Electricity generation in MWh	10 738	9 974	7 792	15 284	19 135	18 619
	Incomes in thous. CZK	12 515	15 107	14 590	24 109	30 786	31 873
Vltava River Board, s.e.	Number of SHEP	14	14	15	16	16	17
	Installed capacity in kW	9 600	9 600	15 500	15 900	15 300	18 400
	Electricity generation in MWh	50 409	35 873	43 030	67 706	74 050	73 485
	Incomes in thous. CZK	53 217	49 992	62 363	103 649	115 982	126 279
Ohře River Board, s.e.	Number of SHEP	20	20	20	20	20	20
	Installed capacity in kW	16 750	16 750	16 750	16 677	16 677	16 677
	Electricity generation in MWh	87 539	106 363	75 560	87 465	96 967	96 188
	Incomes in thous. CZK	95 774	161 747	111 312	137 879	157 570	167 066
Odra River Board, s.e.	Number of SHEP	14	14	14	14	14	14
	Installed capacity in kW	4 750	4 750	4 985	4 985	5 103	5 103
	Electricity generation in MWh	25 896	31 019	20 250	24 292	20 649	20 801
	Incomes in thous. CZK	25 732	41 604	27 798	36 484	35 049	35 033
Morava River Board, s.e.	Number of SHEP	13	14	14	14	14	13
	Installed capacity in kW	3 512	3 612	3 612	3 612	3 612	3 400
	Electricity generation in MWh	14 301	14 476	12 412	13 803	14 415	14 483
	Incomes in thous. CZK	15 716	21 603	18 324	21 221	23 125	24 394
Total River Boards, s.e.	Number of SHEP	76	77	80	81	81	83
	Installed capacity in kW	37 323	37 389	45 723	46 050	45 568	48 797
	Electricity generation in MWh	188 883	197 705	159 044	208 550	225 216	223 576
	Incomes in thous. CZK	202 954	290 053	234 387	323 342	362 512	384 645

Source: River Boards, s.e.

Table 3.2.7

Other incomes of River Board, s.e. in the years 1998 – 2006 in thous. CZK

River Boards, s.e.	1998	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	50 907	54 754	145 989	124 730	173 429	68 368	87 233	92 256	162 403
Vltava River Board, s.e.	56 286	49 222	55 481	79 505	191 391	136 859	85 855	77 430	304 594
Ohře River Board, s.e.	64 398	55 922	66 836	57 809	65 606	67 525	59 410	73 068	80 937
Odra River Board, s.e.	70 977	31 033	49 113	28 208	47 853	41 618	34 712	35 656	41 780
Morava River Board, s.e.	38 021	41 786	54 879	46 462	44 975	55 643	48 960	58 411	61 959
Total River Boards, s.e.	280 589	232 717	372 298	336 714	523 254	370 013	316 170	336 821	651 673

Source: River Boards, s.e.

which a list of goods is issued with regulated prices which are published in the Price Bulletin.

Overall in 2006, River Boards, s.e. recorded an increase in incomes for

abstractions of surface water in absolute terms by CZK 152 million, which represents a year-on-year increase in this category of incomes by 6.5 %. The Ohře River Board, s.e. contributed the most to

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Table 3.2.8
Grants allocated to River Boards, s.e. in 2006 in thous. CZK

River Boards, s.e.	Operational grants	Investment grants	Total grants
Elbe River Board, s.e.	171	286 428	286 599
Vltava River Board, s.e.	11 279 *)	43 270	54 549
Ohře River Board, s.e.	0	20 645	20 645
Odra River Board, s.e.	0	137 797	137 797
Morava River Board, s.e.	81 108 *)	347 514 *)	428 622
Total River Boards, s.e.	92 558	835 654	928 212

Source: MoA, River Boards, s.e.

Note: *) The difference of the amount compared with the table Structure of Revenues and Yields is caused by the date of invoicing of the grants.

Table 3.2.9
Costs of River Boards, s.e. in the years 2005 and 2006 in million CZK

Type of costs	Elbe River Board, s.e.	Vltava River Board, s.e.	Ohře River Board, s.e.	Odra River Board, s.e.	Morava River Board, s.e.	Total River Boards, s.e.
Depreciations						
2005	145,6	162,6	174,7	113,6	106,2	702,7
2006	150,4	175,1	173,5	129,5	111,8	740,3
Repairs						
2005	204,7	320,2	197,8	68,9	222,2	1 013,8
2006	117,3	224,6	124,5	82,8	89,3	638,5
Material						
2005	49,5	24,9	20,7	36,3	37,1	168,5
2006	71,9	24,6	18,6	39,1	39,2	193,4
Energy and fuels						
2005	33,4	27,5	23,7	4,1	9,8	98,5
2006	37,3	27,6	26,0	4,8	11,7	107,4
Personnel costs						
2005	336,8	292,4	229,5	160,9	230,4	1 250,0
2006	357,5	313,6	238,4	170,8	251,1	1 331,4
Services						
2005	64,9	77,6	30,7	30,2	26,7	230,1
2006	106,9	92,3	30,1	34,5	28,2	292,0
Financial costs						
2005	1,5	4,5	0,3	1,8	0,3	8,4
2006	1,0	4,7	0,3	1,5	0,3	7,8
Other costs						
2005	22,9	46,2	- 11,1	31,3	10,1	99,4
2006	37,7	83,1	25,9	-9,2	23,6	161,1
Total costs						
2005	859,3	955,9	666,3	447,1	642,8	3 571,4
2006	880,0	945,6	637,3	453,8	555,2	3 471,9

Source: River Boards, s.e.

this result, where their increase in yield in this category represents in the absolute figure CZK 41 million. River Board, s.e. Vltava, Odra and Morava recorded a net year-on-year increase in all cases in excess of CZK 30 million. Only the Elbe River Board, s.e. recorded a year-on-year increase of CZK 9 million, but this was caused by the fact that it was the only River Board, s.e. to record a drop in supplies of surface water in technical units by more than 28.5 million m³ in comparison with 2005.

In 2006 the favourable hydrological situation persisted, and revenues for electrical energy from own small hydroelectric power stations increased by more than CZK 22 million, and revenues in this area reached

somewhat less than CZK 385 million.

In addition to the favourable hydrological situation, the level of the specified revenues for electrical energy generated by small hydroelectric power stations

(referred to hereinafter as „SHEP“) owned by River Boards, s.e. was influenced by three new power stations being put into operation (two of the Elbe River Board, s.e. and one of the Vltava River Board, s.e.). As is traditional, the highest revenues for electrical energy were recorded by the Ohře River Board, s.e., which has the largest number of own small hydroelectric power stations currently operated. The Vltava River Board, s.e. also records revenues for electrical energy exceeding CZK 100 million. More detailed information about the number of own small hydroelectric power stations in the individual River Boards, s.e., their installed output, generation of electrical energy and yields is given by Table 3.2.6.

The other incomes of River Boards, s.e. represent a total of less important items, and these primarily come from the renting of lands, non-residential premises and water surfaces and other business activities, of which the most important are incomes from the operations of machine mechanisms and road haulage, from laboratory operations and for project and engineering activity, and the item of financial yields also plays a role in the overall level. This item is frequently significantly influenced by many unplanned factors such as insurance performance, increased interest received and often by the level of transfer of certain defined yields which apply to the past but were implemented in this year.

With regard to these unplanned factors and fluctuations which cannot always be predicted, other revenues display significant year-on-year fluctuations.



SHEP Rudolfov

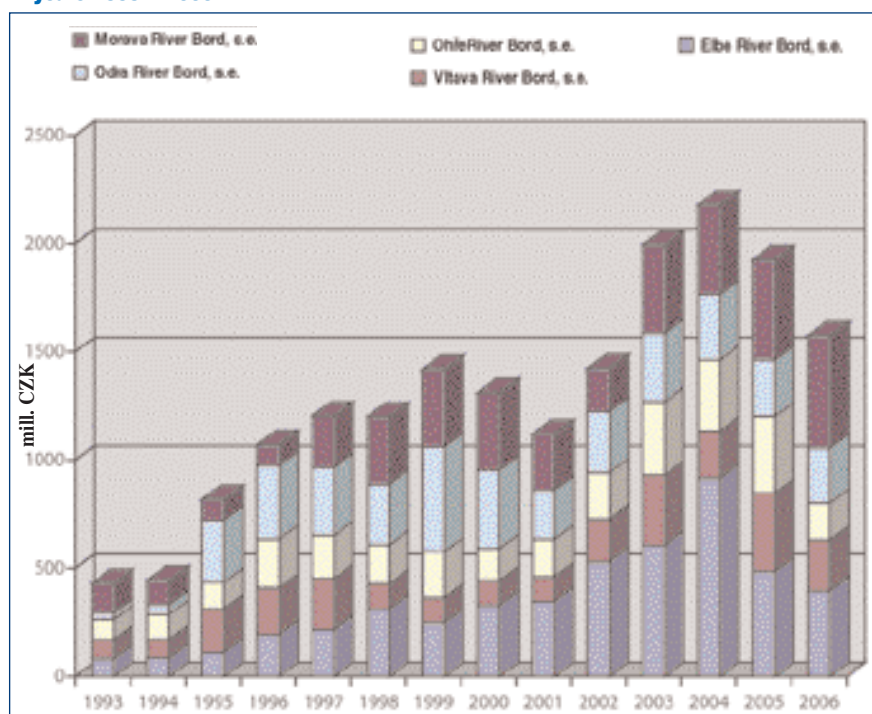
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ons. This was reflected in 2006, when after three years of balanced incomes in excess of CZK 300 million, the item of other revenues reached double the figure, because in the absolute amount it was recorded at the level of CZK 650 million. The highest year-on-year growth was recorded by the Vltava River Board, s.e., where a yield from sold assets appeared in a sum exceeding CZK 300 million. In the future it is not possible to assume the implementation of these abnormal yields in the years to come. Since 2005, special yields have been included in other yields for the Ohře River Board, s.e. for the pumping and transport of water to the conduits owned by it.

The financial needs for the main activities of River Boards, state enterprises are supported every year by many grants of both an operational and investment character. Without state grants, in preceding years the consequences of floods could not have been rectified nor could systematic activity have been initiated making it possible to realise flood-prevention measures, designate flood territories and prepare many conceptual studies. Table 3.2.8 gives the overall operational (non-investment) and investment grants of the individual River board, s.e. allocated in 2006. Apart from the grants via the budget of the Ministry of Agriculture, grants also consisted of financial resources of the State Transport Infrastructure Fund and the Ministry of the Environment via the funds of PHARE, and several regional authorities also contributed to anti-flood measures

The sum of the grants displayed in Table 3.2.8 achieved a level of only 58 % of the preceding period, and operational grants, which in 2006 reached only 18 % of the level for 2005, contributed primarily to this drop, whereas investment grants displayed a drop of slightly more than 23 %. As part of programme measures, programmes were announced for the prevention and liqui-

Graph 3.2.2
Development of investment construction of River Boards, s.e. in years 1993 – 2006



Source: MoA, River Boards, s.e.

Table 3.2.10
Investments of River Boards, s.e. in the years 1998 – 2006 in millions CZK

River Boards, s.e.	1998	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	313,4	248,4	328,5	347,1	529,1	607,6	915,2	485,2	394,9
Vltava River Board, s.e.	115,7	116,3	115,2	114,1	199,3	321,6	219,0	362,4	236,6
Ohře River Board, s.e.	180,2	212,5	148,2	173,4	212,8	339,8	329,5	354,4	170,4
Odra River Board, s.e.	279,1	484,4	361,6	226,8	282,3	316,3	301,3	260,6	254,7
Morava River Board, s.e.	311,0	357,3	356,8	257,8	200,5	407,4	411,9	462,3	518,2
Total River Boards, s.e.	1 199,4	1 418,9	1 310,3	1 119,2	1 424,0	1 992,7	2 176,9	1 924,9	1 574,8

Source: MoA, River Boards, s.e.

Table 3.2.11
Results of River Boards, s.e. (profit, loss) of the years 1999 – 2006 in thous. CZK

River Boards, s.e.	1999	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	35 398	19 859	17 166	4 774	26 542	39 445	36 777	6 132
Vltava River Board, s.e.	16 853	37 838	48 735	- 45 525	45 752	42 008	34 376	177 869
Ohře River Board, s.e.	6 947	11 825	12 415	11 334	28 274	16 817	17 070	47 735
Odra River Board, s.e.	66 870	19 617	22 575	23 002	38 671	11 877	16 680	56 401
Morava River Board, s.e.	8 930	20 647	17 939	24 512	32 170	37 142	13 038	11 054
Total River Boards, s.e.	134 998	109 786	118 830	18 097	171 409	147 289	117 941	299 191

Source: River Boards, s.e.

dation of flood damages from preceding years, the focus and level of which is given in detail in chapter 8, which focuses on financial support in water management. For the Elbe River Board, s.e. and Vltava River Board, s.e., every year one fundamental part of the operational grants was the contribution for the operation and maintenance of waterways, but in the past three years this contribution has not been provided to the specified state enterprises, in contrast

with the investment grants for the building and reconstruction of waterways, which are still allocated as part of the contribution from the State Transport Infrastructure Fund (referred to hereinafter as the „STIF“).

Year-on-year the drop in overall costs of almost 3 % was expressed most in the item of external repairs, which fell by almost 37 %, which in absolute terms

represents an amount of more than CZK 375 thousand. This significant difference is reduced in the overall costs by 28 % as a result of the increase in other cost items. The development of costs in 2006 is a reflection in particular of the lower allocations in the context of the grant titles (operational grants) which were intended in preceding years for essential and rapid securing of operation on waterworks following extreme flood situations.

The most significant drop in costs in the item of repairs in the context of the gradual elimination and accounting of flood damage was recorded in particular by the Morava, Vltava and Elbe River Boards, s.e. An overview of the costs of River Boards, s.e. in 2006 and their comparison with the preceding year is given in Table 3.2.9.

Last year River Boards, state enterprises spent CZK 1547.8 million on the implementation of investments, of which CZK 740 million was drawn from own sources, and a total of almost CZK 835 million was from investment resources not covered by own sources.

A clear overview of the use of investment resources over the longer term is given in Table 3.2.10 and Graph 3.2.2. From the data it is evident that in a manner similar to that in the operational sphere, even in the context of investment work there is a gradual rundown. This turning point from significant increases to a year-on-year drop is expressed in the context of investment construction with a far greater delay, because the preparation and implementation of overall renewal and reconstruction in the form of investment work is more demanding in terms of time and implementation (in comparison with repairs and maintenance).

In 2006 all River Boards, state enterprises recorded a profit, representing total financial

Table 3.2.12
Allocation of profits for year 2006 in thous. CZK

River Boards, s.e.	Profit	Allocation of profit or covering of loss					
		Reserve fund	Cultural and social need fund	Investment fund Capital funds	Social fund	Bonus fund	Accrued losses
Elbe River Board, s.e.	6 132	613	5 519	0	0	0	0
Vltava River Board, s.e.	177 869	2 000	6 000	163 869	0	6 000	0
Ohře River Board, s.e.	47 735	20 735	9 000	15 000	0	3 000	0
Odra River Board, s.e.	56 401	28 278	5 000	17 123	0	6 000	0
Morava River Board, s.e.	11 054	1 106	6 000	0	0	3 000	948

Source: MoA

Table 3.2.13
Number of workers of River Boards, s.e. in the years 2005 and 2006 (average calculated state)

River Boards, s.e.	2005	2006
Elbe River Board, s.e.	939,2	940,7
Vltava River Board, s.e.	811,7	811,4
Ohře River Board, s.e.	618,9	606,1
Odra River Board, s.e.	463,2	462,7
Morava River Board, s.e.	736,7	743,3
Total River Boards, s.e.	3 569,7	3 564,2

Source: River Boards, s.e.

Table 3.2.14
Average salary in CZK achieved in the individual River Boards, s.e. in the years 2000 – 2006

River Boards, s.e.	2000	2001	2002	2003	2004	2005	2006
Elbe River Board, s.e.	15 641	16 565	17 941	18 750	20 125	21 781	23 036
Vltava River Board, s.e.	15 819	16 526	18 444	19 073	20 556	21 909	23 414
Ohře River Board, s.e.	15 704	17 085	18 435	19 420	20 661	22 091	23 464
Odra River Board, s.e.	14 717	15 811	17 516	18 362	19 656	21 050	22 337
Morava River Board, s.e.	14 663	15 820	16 216	16 899	17 975	19 233	20 798
Average wages in River Boards, s.e.	15 330	16 396	17 724	18 505	20 072	21 243	22 637

Source: River Boards, s.e.

Note: Calculated by weighted average.

resources in the amount of almost CZK 299.2 millions. The greatest drop in the attained profit was recorded by the Elbe River Board, state enterprise and in contrast with this the greatest increase in profit was attained by the Vltava River Board, state enterprise the level of which was influenced by the sale of eleven twelfths of the construction part of the small hydroelectric power station Mířejovice.

The share of the individual River Boards, s.e. in the overall economic result and development of the profit over the last eight years is documented by Table 3.2.11. The allocation of attained profits to the individual funds and proposal for covering of loss in the concrete River Boards, s.e. is given in Table 3.2.12.

The average calculated number of workers in River Boards, state

enterprises in 2006 fell by six workers to a total state of 3 564 persons.

The situation in the development of labour in the context of significant watercourse administrators is displayed by Table 3.2.13, from which it is evident that last year the number of employees in three River Boards, s.e. stabilised, and the total number remains at approximately the same level as in 2004, with the exception of the Ohře River Board, s.e., with a drop of 13 workers, in contrast with the Morava River Board, s.e., where there was an increase of 7 workers.

In 2006, the average monthly salary in the River Boards, s.e. represented an amount of CZK 22 637, see Table 3.2.14, and in 2006 it displayed a year-on-year increase by 6.6 %. In absolute figures, the year-on-year increases are from CZK 1 255 for the Elbe River Board, s.e. to CZK 1 565 for the Morava River Board, s.e. The Morava River Board, s.e.

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Table 3.3.1

Utilisation of individual non-investment financial resources of AWMA in 2006 in millions CZK

Activity	Source	Budget	Reality
Maintenance and repair of watercourses	State budget	81,512	81,506
Operation of watercourses and associated waterworks	State budget	20,538	20,514
Countryside care programme	State budget	0,104	0,104
Flood prevention	State budget	–	–
Maintenance of MDF	State budget	19,387	19,372
Operation of MDF	State budget	9,700	9,639
Other non-investment expenses	State budget	21,000	20,993
Elimination of flood damage from 2006 – programme 229 114	State budget	11,180	11,159
Total	State budget	163,421	163,287

Source: AWMA

Table 3.3.2

Covering of expenses of AWMA for maintenance and repair of watercourses and waterworks in millions CZK in the years 2002 – 2006

Source for covering expenses	2002	2003	2004	2005	2006
Budget of MoA – watercourses and reservoirs	119,7	122,4	102,4	90,1	81,5
Budget of MoA – MDF	0	0	0	17,5	19,4
Countryside Care Programme	0,6	0,3	0,2	0,2	0,1
Flood prevention measures	8,9	26,1	24,2	0	0
Total state budget	129,2	148,8	126,8	107,8	101,0
State Land Reclamation Fund	0	0	1,5	1,5	0
Total	129,2	148,8	128,3	109,3	101,0
Elimination of flood damage from resources of Land Fund of the Czech Republic	0	0	0	0	0
Maintenance and repair of main land reclamation equipment from resources of Land Fund of the Czech Republic	54,9	59,9	54,8	0	0
Total expenses	184,1	208,7	183,1	109,3	101,0

Source: AWMA

Table 3.3.3

Non-investment expenses for watercourses, maintenance and repairs of main drainage facilities administered by AWMA in 2006 according to regions in millions CZK

AWMA Catchment area	Maintenance and repair of watercourses	Operation of watercourses and waterworks	Rectification of flood damage	MDF Maintenance	MDF operation	Total
Vltava	27,406	0,540	2,580	8,993	1,025	40,544
Elbe	17,224	3,445	2,070	4,295	2,152	29,186
Ohře	5,986	1,000	2,059	1,293	0,015	10,353
Morava	25,165	11,186	2,445	3,253	6,172	48,221
Odra	5,725	4,343	2,005	1,538	0,275	13,886
Total	81,506	20,514	11,159	19,372	9,639	142,190

Source: AWMA



Labe river, Roudnice nad Labem

continues to record the lowest average salary.

3.3 Agricultural Water Management Authority

In 2006, in compliance with the provisions of the Deed of Foundation, Water Act, Act concerning the Assets of the Czech Republic and other legislative regulations, the Agricultural Water Management Authority ensured the administration of small watercourses with a total length of 35 700 km (of which 14 377 km were adjusted watercourses) and 484 reservoirs. The book value of these administered tangible fixed assets is CZK 8.6 billion.

Since 2005 the AWMA has administered MDF in a total book value exceeding CZK 3 billion. According to the inventory as of 31.12.2006, these assets include a total of 11 530 km of open and pipe water channels, 136 pumping stations, 13 reservoirs associated with drainage systems and 830 culverts.

The activities and trading of the AWMA in 2006 focussed primarily on tasks from the aspect of ensuring the administration, operation and maintenance of water management assets of the Czech Republic, the acquisition and technical renewal of investment assets administered by the MoA, programme solutions and financing, elimination of flood damage, implementation of flood-prevention measures, building a public administration information system within MoA, ensuring and evaluating monitoring of surface water, monitoring of foreign substances in surface water and approximation strategy (Council Directive 91/676/EEC).

The extensive spring and summer floods had a significant impact on the activities of the AWMA in 2006. The flood events in 2006 affected virtually the entire territory of the Czech Republic. On the basis of field surveys the AWMA recorded damage to watercourses, reservoirs and main drainage facilities in entrusted assets at an estimated

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level of CZK 240 million. Watercourses were damaged both in sections with natural riverbeds and altered beds. In many places waterworks were damaged. The catchment areas of the Morava and Dyje were the worst affected in the context of the AWMA.

When implementing remedial measures to correct damage caused by last year's floods it was necessary as a priority to renew and reconstruct waterworks and to renew the stability and flow capacity of the beds in watercourses throughout the entire length, in particular in the intravilan areas of municipalities and towns. The AWMA draws funds for the implementation of these measures from sub-programme 229 114. In 2006, almost CZK 12.8 million was invested within the framework of this grant title.

One of the main priorities of the AWMA last year was the implementation of the event of the 1st stage of the Flood Prevention Programme. In 2006, flood-prevention measures in an amount of approximately CZK 68 million were implemented on the assets of the AWMA. The aim of the programme is to adjust drainage conditions in the catchment area so that flood waves resulting from heavy or persistent rain are limited or ameliorated. The subject of the measure was in particular the construction of reservoirs and protective dykes and an increase in the flow capacity of watercourses. In 2006 events were also prepared which will be implemented in the course of the 2nd stage of the programme Flood Prevention in the years 2007 to 2012.

As in previous years, in 2006 the AWMA was one of the most important investors in the landscaping programmes of the MoE. The implementation of structures via the River System Revitalisation Programme was one of the main activities of the organisation in the past year. The primary aim was to improve the hydrological regime in the landscape, to increase the land's retention ability, and to implement measures leading to the renewal of the natural character of small watercourses.

In order to ensure the proper functioning and operability of watercourses and waterworks, the AWMA was allocated financial resources in the amount of

Table 3.3.4

Composition of revenues of AWMA in millions CZK in the years 2002 – 2006

Revenues	2002	2003	2004	2005	2006
Payments for abstraction of water	2,5	2,6	2,7	3,9	4,2
Rents of water management constructions	5,2	5,3	5,0	5,2	5,4
Other revenues	1,4	1,0	1,4	5,1	2,7

Source: AWMA

Table 3.3.5

Rectification of flood damage from the years 2000, 2002 and 2006 on watercourses administered by AWMA in 2006 in millions CZK

Source – programme	Investment costs	Non-investment costs	Total
Programme 229 112	0	0	0
Programme 229 113	1,084	0	1,084
Programme 229 114	1,597	11,159	12,756
Total	2,681	11,159	13,840

Source: AWMA

Table 3.3.6

Structure of investments and financial sources of AWMA in millions CZK in the years 2003 – 2006

Structure of investments	Financial sources	2003	2004	2005	2006
Adjustment of watercourses	State Budget – MoA Special-purpose fund (replacement recultivation)	52,2	36,7	41,5	80,5
	State fund for cultivation of land	0,1	0,04	0	0
		0	0	0	0
Studies of outflow conditions	State Budget	4,7	3,3	0	0
Revitalisation of watercourses	State Budget	41,6	24,8	22,3	26,1
Flood prevention measures	State Budget	54,4	81,3	58,6	55,9
	European Investment Bank	66,8	53,0	129,0	12,1
Rectification of flood damage from the year 1997	Státní rozpočet	0,5	0,08	0	0
	European Investment Bank	0	0	0	0
Rectification of flood damage from the year 1998	State Budget	0	0	0	0
Rectification of flood damage from the year 2000	State Budget	3,8	17,2	0,5	0
Rectification of flood damage from the year 2002	State Budget	0,3	7,5	21,3	1,1
	European Investment Bank	8,3	41,7	113,1	0
Rectification of flood damage from the year 2006	State Budget	–	–	–	1,6
Total		232,7	265,62	386,3	177,3

Source: AWMA

CZK 81.5 million to ensure maintenance, repairs and elimination of emergency states. Within the framework of non-investment expenses, in 2006 the AWMA also drew on resources for the operation of watercourses and waterworks, the Programme of Care for the Landscape and Elimination of Flood Damage. For the maintenance of MDF, financial resources were allocated to the AWMA in the amount of CZK 19.4 million, and resources for operation were approximately CZK 9.6 million.

A summarised overview of the true utilisation of these financial resources is given by Table 3.3.1

The maintenance of watercourses focussed mainly on weed cutting, cleaning, repairs to objects ensuring flood protection, liquidation of non-native invasive species of plants (giant hogwe-

ed, Japanese knotweed) and the maintenance of bank vegetation. As part of the maintenance of MDF, the cutting of weeds and cleaning of channels for ensuring the outflow of water from drainage systems was performed. The operational resources of the MDF were used in particular to ensure the operation of 136 pumping stations which ensure the pumping of water from lower-lying areas to main watercourses.

An overview of the financial resources used in recent years out of the individual financial sources for maintenance and repairs of watercourses and waterworks is given by Table 3.3.2.

The allocation of non-investment expenses to watercourses and main drainage facilities in the administration of AWMA according to the individual areas is given by Table 3.3.3.

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The incomes of AWMA have the character of incomes from own activities, and other incomes consist of additional, incidental and other incomes. The attained incomes in 2006 came to a total of CZK 12.3 million, of this payments for the abstraction of surface water amounted to CZK 4.2 million. The price of surface water for the year 2006 was designated in the amount of CZK 1.19/m³. This is the price excluding VAT, because as an organisational unit of the state the AWMA does not bill this tax.

The price composition of revenues of the AWMA is given in the following Table 3.3.4.

In 2006 the financing of the sub-programme 229 113 – „Rectification of flood damage from the year 2002” was terminated. The AWMA had already completed all construction work in 2005. Last year only purchases of land in a volume of approximately CZK 1.1 million were made.

An overview of financial resources drawn for the elimination of flood damage from the year 2000 and 2002 and now also for the elimination of flood damage from 2006 is given in Table 3.3.5.

In the AWMA in 2006, investment construction at a total level of CZK 177.2 million CZK, including the programme of flood-prevention measures in the amount of CZK 68 million and the elimination of flood damage from 2002 in the amount of CZK 1 million and elimination of flood damage from 2006 in the amount of CZK 1.6 million was implemented. An overview is given in Table 3.3.6.

3.4 Forests of the CR, s.e. - administrations of watercourses

One of the many important activities of Forests of the CR, s.e. is the administration of approximately 19.5 thousand kilometres of designated small watercourses and mountain streams.

Within the framework of care for the entire catchment areas of watercourses,

Forests of the CR, s.e. also administers mountain streams outside the territory intended for the performance of the function of a forest, despite the fact that they flow through agricultural land and the intravilan area of municipalities. The exercise of administration of watercourses contains activities designated by the Water Act and implementing regulations. In the case of the performance of the duty of regulating mountain streams, this is a public, non-commercial service with the aim of stabilising the outflow conditions in the catchment area. Care for watercourses in the context of Forests of the CR, s.e. contains administration of fixed assets associated with watercourses in a book value of CZK in excess of 2.5 billion (in particular, alterations to watercourses, objects, flood-prevention measures, reservoirs). The administration of watercourses is methodologically managed by the department of water management at the headquarters of the company and ensured by a total of 76 employees at the 7 administrations of watercourses according to the catchment areas.

Measures on watercourses in the administration of the Forests of the CR, s.e. are financed from own resources and grant resources. The grants principally involved measures carried out in the state interest through section 35 of the Forestry Act, for the programme of the MoA Flood Prevention and programme for the

rectification of flood damage to state water management assets. Also from the funds of the EU, the Operational Agriculture Programme is used, and the regions also contribute partially to measures on small watercourses. Activities carried out in connection with the administration of watercourses are of a non-commercial nature, and in relation to the overall expended financial resources they bring practically no profit.

In 2006, activities focussing primarily on the following were performed in the water management section of Forests of the CR, s.e.:

- exercising the administration of designated small watercourses as directed by Act No 254/2001 Coll. in the valid wording and associated regulations,
- implementation of investment and non-investment events focussing on flood prevention and also events in the public interest pursuant to section 35 of the Forestry Act,
- eliminating flood damage from the spring flood and two summer floods which mainly affected the catchment areas of the Morava, Dyje, Elbe and Vltava,
- Ensuring project and engineering preparation of events (including elimination of flood damage) prepared for implementation in the years to come.



Labe river, Velké Žernoseky

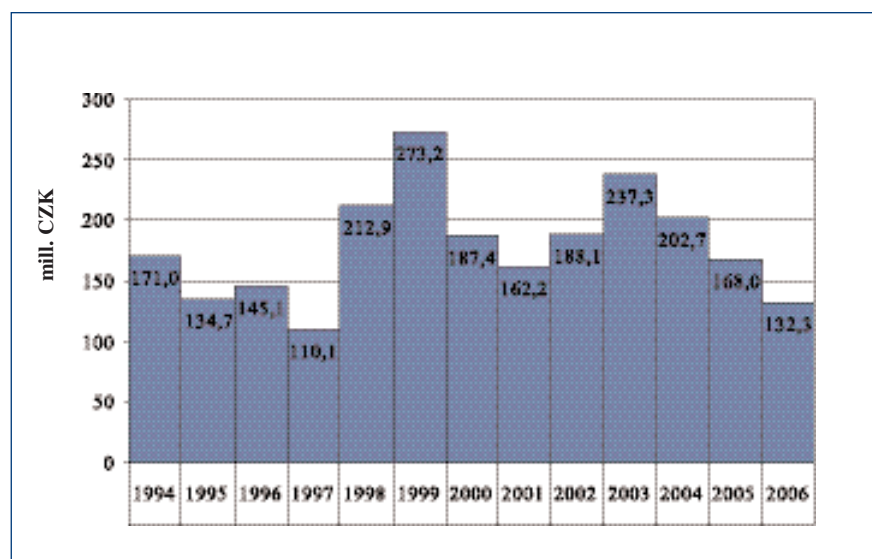
The most significant activities in the catchment area of the Odra in 2006 included the ensuring of financing and subsequent implementation of seven structures from the financial resources of the Moravia-Silesia Region (approximately CZK 7.5 million expended), and other important events included the Central Opava flood protection projects at km 0.950 – 1.747, including wash-load trap and completion of the constructions Jesenný – Vápenný Stream in the district of Šumperk and Skorošický Stream in the district Jeseník.

Following local spring floods, by the end of 2006 in the catchment area of the Dyje non-investment flood damage with a total cost of CZK 12.7 million was eliminated from the own resources of the Forests of the CR, s.e. The preparation of events included in the second stage of the grant programme Support for Flood Prevention was initiated, and grant events were completed on the tributary of the Besénka in the Blansko district and the retention reservoir Fialská in the district of Brno – rural. For example, the event Polomina and Boračský Stream were completed in the district of Žďár nad Sázavou from own resources.

The catchment area of the Elbe was also affected by the spring floods, which caused damage to the extent of CZK 58 million. There were also summer floods here in August 2006 causing damage of approximately CZK 11 million. In 2006 damages of a non-investment character were eliminated (approximately CZK 6.3 million) and events were prepared for the utilisation of grants. Out of the rectification of flood damage the significant event of the Knapovecký Stream – Hylváty has been initiated. Other implemented constructions include, for example, event from the grant programme of the EU stream from Vlčí jamy in Kryštofovo Valley in the district of Liberec and events from the programme MoA Flood Prevention – Huntířovský Stream (Skuhrov at Železný Brod) in the district of Jablonec. Using its own resources, the enterprise implemented events such as Loukotnický Stream in Brandýs nad Orlicí, Rybenský Stream in Rybná nad Zdobnicí,

Graph 3.4.1

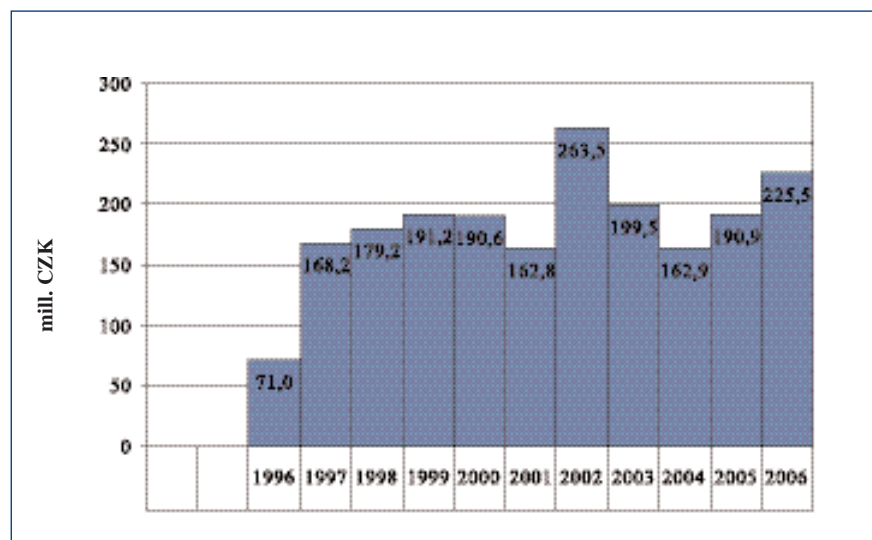
Investment expenses of Forests of the CR, s.e. in the years 1994 – 2006 in millions CZK – watercourses



Source: Forests of the CR, s.e.

Graph 3.4.2

Income of Forests of the CR, s.e. for surface water in the years 2000 – 2006 in thous. CZK



Source: Forests of the CR, s.e.

Table 3.4.1

Structure of financing of Forests of the CR, s.e. – administrations of watercourses in 2006 in millions CZK

Forests of the CR, s.e.	Total own resources	Total grants	Of this flood damage	
			Grants	Own resources
Investments	93,6	38,7	4,3	14,3
Non-investments	189,6	35,9	6,9	49,6
Total	283,2	74,6	11,2	63,9

Source: Forests of the CR, s.e.

Table 3.4.2

Income of Forests of the CR, s.e. for surface water in the years 2000 – 2006 in thous. CZK

Year	2000	2001	2002	2003	2004	2005	2006
Incomes	7 876	8 639	9 790	9 390	10 530	9 483	9 581
Price per m ³ *)	1,06	1,17	1,23	1,24	1,33	1,35	1,39

Source: Forests of the CR, s.e.

Note: *) The unit price for 1 m³ is given without value added tax.

Pěčínský Stream in Pěčina in the district of Rychnov nad Kněžnou, Kunderatický Stream II. in Kunderatice and Bohdašínský Stream in the district of Nové Město nad Metují and Mikulášský Stream (Vraclav) in the district of Ústí nad Orlicí.

In the catchment area of the Vltava, following local spring floods, non-investment flood damage (approximate-

ly CZK 3.1 million) was eliminated by the end of 2006. Following complicated negotiations with bodies of state nature protection, the rectification of flood damage was initiated on the Oplanský Stream – flood damage from the year 2002 in the Kolín area. One of the most important constructions to be completed was the damming of the stream Mladčina in the district of Benešov.

The catchment area of the Berounka saw the completion of the retention reservoir Nad mlýnem in the Tachov region performed in the public interest pursuant to section 35 of Act No 289/1995 Coll. As a result of the flood in May and June 2006 a rectification of their consequences was performed in the Rokycany area and the Radčický Stream in the district of Plzeň. Other significant events worthy of mention include the damming of the mountain streams Pastuší Luh and the stream in Pánví in the district of Beroun.

One of the most significant events in the catchment area of the Ohře in 2006 was the completion of the investment event in the district of Ústí nad Labem – Nerudův Stream II, which represents a revitalisation of the riverbed at a length of 1km and its stabilisation by transverse objects, and the event of the damming of the mountain streams of the Jindřichovický Stream in the district of Sokolov and events in Nové Hamry in the Karlovy Vary area. Non-investment events included, for example, repairs to the dams of mountain streams of Dobranovský Stream on the Česká Lípa area and the Unčinský Stream in the district of Ústí nad Labem.

At the start of 2006 the catchment area of the Morava was affected by extensive flooding, which influenced the activity of administration when rectifying its consequences. In 2006 flood damage to the value of CZK 11.3 million had already been eliminated. Other events are partly finished or about to be commenced – the significant events are the Hajnušovský Stream, Humenec, Rokytenka and Hutiský Stream in the district of Vsetín, Rusava near Bystřice pod Hostýnem, Úsobrnka in the Prostějov area, Jestřábí Stream in the Šumperk area and Javoříčka near Litovel. In addition, in the Vsetín area the event Rouštká was completed from an EU grant, and the repairs to the dams of the mountain streams of the Radkovský Stream are partly completed. Using own resources, the enterprise implemented, for example, the non-investment events of the Kateřinský Stream and Střelenka in the district of Vsetín, Želechovický in the district of Zlín and Hrubý Stream in the Hodonín area.



Morávka river, Vyšší Lhoty



In connection with the administration of watercourses, Forests of the CR, s.e. expended a total of CZK 357.8 million, out of which expenses of an investment character were CZK 132.3 million. Out of this volume, investments represent CZK 93.6 of own resources. Investments of Forests of the CR, s.e. focussed on preventative measures and the construction and reconstruction of dams of mountain streams in areas affected by floods. The measures are implemented primarily with the aim of creating retention areas to catch wash-load, stabilise the longitudinal gradient of watercourses using transverse objects and ensuring flood protection by increasing the capacity of riverbeds in the intravilan areas of towns. CZK 222.5 million was used for the repair and maintenance of basic resources of damming mountain streams, of which CZK 189.6 million was from own resources. All the costs associated with the administration of water-

courses are included in the volumes given.

One significant part of the activity of Forests of the CR, s.e. in the area of water management was the rectification of flood damage. This primarily involved increasing the capacity of riverbeds, eliminating wash loads and repairs to retaining walls, paving, transverse objects and weirs. A total of CZK 75.1 million was expended on the rectification of flood damage, of which CZK 63.9 million was from own resources.

The following graphs 3.4.1 and 3.4.2 give an overview of the overall annual investment expenses and resources expended on repairs and maintenance over the longer timescale.

The development of incomes of Forests of the CR, s.e. for abstractions of surface water and unit prices is given in Table 3.4.2.

3.5 Waterways

Competence in the field of care for the development and modernisation of waterways of importance for transport continued to be exercised in 2006 as in previous years by the Ministry of Transport, in particular in care for the development of the most important system of waterways in the Czech Republic – the Elbe-Vltava waterway.

According to the „European Agreement on Main Inland Waterways of International Significance“ (AGN), the main European waterway E 20 of the Elbe and its branch E 20-06 Vltava is a waterway of international significance, and it remains the only navigable water connection of the Czech Republic to the western European network of waterways. From the waterworks of

Ústí nad Labem – Střekov upstream navigability is ensured by a system of waterworks. From Střekov to the state border of the Czech Republic with Germany in the regulated section of approximately 40 km navigation operation depends on the state of the water according to the flow of the time. The spring floods of 2006 caused an extraordinary worsening of navigability as a result of flood deposits. In the Mělník – Chvaletice section of the Elbe in particular deposits have been causing a restriction in the useable draughts, which will be restored in full by the watercourse administrator as part of a programme by the end of 2007.

In 2006 events were implemented from the resources of the State Transport Infrastructure Fund in the framework of financing and prefinancing of resources of the EU Structural Funds and work was paid for associated with the reconstruction, modernisation and construction of waterways in a total amount exceeding CZK 523 million.

As part of the terminated programme 327 520 „Support for the Development of Water Transport” and the new programme 227 520 „Development and Modernisation of Waterways and Harbours” work to the value of CZK 523.3 million was expended on reconstruction, modernisation and construction of waterways from the budget of the STIF in the field of the care of the MoT for the development of waterways. In comparison with the preceding year, this expenditure represents an increase of 42.7 %. Constructions for extending the navigability of the Elbe to Pardubice, specifically the preparation and work in advance of the construction „Lock Přelouč II” and implementation of the construction „Widening of Navigable Channel of Elbe r. km. 103.0 – 108.3” played the largest part in this significant increase in implemented sources. The use of financial resources of the EU structural funds in the framework of the Infrastructure Operational Programme also increased by 55 % to

CZK 99.9 million in comparison with the CZK 64.4 million in the preceding year. Since 2005 the standpoints of the department of transport and the environment on the renewal process EIA having been getting closer on a compromise solution for construction improving the navigation conditions in the lower Elbe by one weir in the area of the city of Děčín. This solution also includes the building of a hydroelectric power station with the aim of increasing the share of renewable energy sources. The initiation of construction of the navigation object in Přelouč is conditional on an exception being granted again by the MoE.

Out of the CZK 523.3 million referred to from the SFDI budget, the Elbe River Board, s.e. Implemented CZK 61.9 million and the Vltava River Board corp. Imple-

mented CZK 38.4 million. Other resources were implemented by the investor MoT – Directorate of Waterways of the Czech Republic in the amount of CZK 419.6 million, and also by private investors in the amount of CZK 3.4 million.

Last year preparatory and construction work on associated constructions for the completion of navigability of the Elbe to Pardubice were ensured, as were constructions of further development of waterways on the Elbe and Vltava. At the same time programme material was processed for the significant use of financial resources of the EU for the development of waterways, including support for the development of recreational and sporting navigation. The initiation of implementation on the section of waterways is expected in 2007.



Cidlina river, Hradištko



FLOOD SITUATION IN 2006

4.1 Course of floods

The year 2006 was specific in terms of the amount of flooding. The passage of the floods caused extensive damage to riverbeds and faults in bank reinforcements, potholes and extensive damage to waterworks. Longitudinal and area erosion formed deposits in riverbeds which restricted the passage of water in the bed and could cause rapid bursting of banks even when there is only a small increase in flows.

In order to limit the secondary damage resulting from a worsened flow profile of riverbeds and reduced functionality of objects on watercourses, it was necessary to ensure prompt repairs to flood damaged state property which state river board corporations or the AWMA are authorised or competent to manage. It was not possible to ensure this without the financial participation of the state.

Flood from March to April 2006

The flood from March – April 2006 was striking in its scope (because it impacted virtually the entire territory of the Czech Republic) and also in the duration of high flows, where, although they did not reach extreme flow values, extraordinary volumes of flood waves were recorded.

At the end of April (from 24.3.2006) there was a marked warming of the air and subsequent intense thaw of snow cover, which resulted in a marked increase in flow in watercourses. This adverse state was made worse in several localities by heavy rainfall.

In view of the flood situation, by its resolution No 351 from 2.4.2006, the

government declared a state of emergency in seven regions of the Czech Republic – the South Bohemia, Central Bohemia, Ústí nad Labem, Pardubice, South Moravia, Olomouc and Zlín regions. This state was extended by government resolution No 380 from 5.4.2006 and then definitively terminated on 19.4.2006 at 24:00.

Damage to state water management assets was ascertained on the basis of Order of the Under Secretary of State for Agriculture No 3/2006 – for ascertaining the consequences of the flood for water management assets. In order to ascertain the damage by a local investigation, flood commissions were assembled which contained workers of the watercourse managers and also representatives of the relevant water management authority and as needs be representatives of the Countryside and Nature Protection Agency (referred to hereinafter as the „CNPA“), administrations of protected countryside areas or national parks. These commissions made out protocols from the local investigation into the ascertaining of the extent of flood damage.

Flood from May to June 2006

In the course of May, the territory of the Morava catchment area was impacted by several waves of heavy rain, and the flood caused damage primarily to small watercourses. The catchment area of the upper Vltava and the catchment area of the Berounka were the other areas primarily affected.

The worst affected places were the territorial area of the municipality with expanded competence Rokycany and the area of Brdy. The territory of southern Bohemia (in particular the Tábor area) was also partly affected by this heavy rainfall, but so was part of the

district of Prague West, where the rain caused great damage in particular to the Únětický Stream, which is a recipient of drained rainwater and discharged waste water from the waste water treatment plant (referred to hereinafter as the „WWTP“) and contaminated water treatment plant of the airport Prague – Ruzyně – NORTH.

Damage to state water management assets was ascertained on the basis of the Order of the Minister of Agriculture No 4/2006 – for ascertaining the consequences of floods to state water management assets. Once again flood commissions were assembled which made out protocols from the local investigation into the ascertaining of the extent of flood damage.

Floods from July to August 2006

In the period of these summer months a large part of the territory of the Czech Republic was impacted by heavy local rainfall, but this primarily affected the catchment area of the Elbe. This rainfall caused rivers to burst their banks and thus cause damage to state water management assets. In order to ascertain the extent of damage to state water management assets, Order of the Under Secretary of State for Agriculture No 5 – for ascertaining the consequences of the flood for water management assets was issued which ordered that as soon as the flood state ended the state river board corporations, the Forests of the Czech Republic, s.e. and the AWMA should establish working committees to appraise the consequences of flood damage, and these then made out protocols from a local investigation concerning the ascertaining of extent of flood damage.

4.2 Rectification of flood damage

Total damages to state water management assets after the aforementioned floods were enumerated as more than CZK 2.5 billion.

By Government Resolution No 670/2006 from the date 31.5.2006, the government of the Czech Republic approved resources from the state budget in the amount of CZK 1.9 billion for the rectification of the consequences of the flood of the year 2006, and of this amount CZK 1 579.3 million was intended for elimination of the consequences of the flood to state water management assets. The remaining amount applies in particular to agricultural and forestry assets.

In the approved documentation of sub-programme 229 114 – „Rectification of consequences of flood of 2006“ for the years 2006 – 2009 there is an assumption of the use of financial resources in an amount of almost CZK 1.6 billion from state resources, CZK 57 million in compliance with Act No 574/2002 Coll., concerning the acceptance of a framework loan by the Czech Republic from the European Investment Bank (referred to hereinafter as the „EIB“) for the financing of the elimination of flood damage from 2002, which was amended by Act No 532/2006 Coll., and the remaining resources consist of the own resources of investors. This sub-programme is a part of programme 229 110 – „Rectification of consequences of flood to state water management assets“ under which the consequences of floods from 2000 and 2002 were also rectified.

Total damages for the individual state organisations – administrators of watercourses – were enumerated in this amount (Morava River Board, s.e. approximately CZK 8278 million, Elbe River Board, s.e. more than CZK 814.3 million, Vltava River Board, s.e. more than CZK 276.4 million, AWMA approximately CZK 250.9 million, Forests of the Czech Republic, s.e. approximately 207.9 million, Ohře River Board, s.e.

approximately CZK 110 million and for the Odra River Board, s.e. more than CZK 58.2 million).

According to damage protocols, the damage represents the following scope in technical parameters – elimination of ripping of natural riverbeds in a scope of more than 258 thousand m³, elimination of rips and wash-loads in riverbeds and reservoirs in a scope of more than 1 856 thousand m³, rectification of faults in reinforcement of riverbeds and constructions of waterwork objects in a scope of more than 232 thousand m², rectification of damage to dykes and local adjustments to watercourses in a scope of more than 525 thousand metres and rectification of damage to objects and associated equipment and rectification of damage to transverse stabilisation objects in riverbeds in a scope of approximately 1 395 of these objects.

4.3 Flood prevention

In the field of flood protection the priority is compliance with the fundamentals for increasing the retention effect of the catchment area. But this is a long-term matter, and so we give it due attention in the conceptual material of the individual departments within the context of sustainable development.

By its ruling No 1304 from the date 15.11.2006, the government of the Czech Republic approved the documentation of the programme 129 120 – „Support for Flood Prevention II“, and required the MoA to ensure the implementation of these programmes in the years 2007 – 2012 assuming the passing of the Act concerning the acceptance of a loan of the Czech Republic from the EIB:

- programme 129 120 – „Support for Flood Prevention II“ a scope of grant resources in the amount of CZK 10 billion is designated,
- program 129 130 – „Support for Renewal, Dredging and Reconstruction of Fishponds and Construction of

Reservoirs“ in the amount of CZK 4.2 billion,

- land adjustments focussing on flood-prevention measures in the amount of CZK 1 billion (in the years 2007 – 2010).

The documentation of the programme 129 120 – „Support for Flood Prevention II“, which follows on from programme 229 060 – „Flood Prevention“, implemented in the years 2002 – 2007, was also approved by the aforementioned ruling of the government of the Czech Republic in a scope of grant resources in a total amount of CZK 10 billion, of which CZK 6 billion represents a loan from the EIB accepted by the Czech Republic by Act No 572/2006 Coll., CZK 3 billion represents resources from the yields of privatisation, CZK 1 billion from state resources and another CZK 0.5 billion consists of own resources of investors.

Programme 129 120 is subdivided into four sub-programmes:

129 122 – „Support for Flood Prevention Measures and Retention“, which focuses on:

- a) construction and renewal of dry reservoirs (polders),
- b) construction and renewal of reservoirs,
- c) reconstruction of existing reservoirs and polders,
- d) construction and reconstruction of objects of territories intended for flood spread.

129 123 – „Support for Flood Prevention Measures along Watercourses“ with a focus on:

- a) increasing the capacity of riverbeds,
- c) protective dykes,
- d) increasing the flow capacity of weirs,
- e) reconstruction of dykes,
- f) stabilisation of riverbeds.

129 124 – „Support for Increasing the Safety of Waterworks“.

129 125 – „Support for Defining Flood Territories and Studies of Drainage Conditions“ (including designation of territory threatened by special floods).

The implementation of these measures is ensured in particular by watercourse administrators (River Boards, s.e., Forests of the Czech Republic, s.e. and AWMA). The programme creates the possibility of the involvement of municipalities, federations of municipalities, towns and regions in the process of drafting flood-prevention measures via the institute of the so-called proposer. The implementation of the measures themselves is in the competence of the watercourse administrators.

Programme 129 130 – „Support for Renewal, Dredging and Reconstruction of Fishponds and Construction of Reservoirs“, in a scope of grant resources of CZK 4.2 billion, of which the loan from the EIB is CZK 3 billion, the resources from the yield of privatisation are CZK 0.3 billion, CZK 0.9 billion is from the state budget, and another CZK 1.5 billion consists of own resources of the investors (or other sources).

The main material aims of this programme are:

- improvement in technical state of fishpond fund of the Czech Republic and renewal of water management functions of fishponds and reservoirs with regard to their significance,
- reducing the consequences of extreme hydrological situations – floods and drought,
- increasing safety of fishponds and reservoirs during floods (part of flood protection – prevention of danger of incidence of special flood),
- dredging of fishponds with the aim of renewing the storage volume of reservoirs useable for water management purposes (in particular reinforcing retention reservoirs for reducing a culmination flood and accumulation of water for improving flows during droughts),
- support for construction of new reservoirs which will be connected up in the system of flood protection or serve for improving flows during droughts with additional assumed use for extensive fish farming,
- rectifying flood damage to dykes and



Lužnice river, Veselí nad Lužnicí

fishpond objects and those of reservoirs caused by floods and individually exceeding CZK 250 under the assumption that resources beyond the framework of resources in the state budget for programme 129 130 will be released for this damage.

For both programmes, a strategic expert's team will operate, the aim of which is to evaluate each proposed measure according to a unified methodology. The methodology enables objective and transparent designation of a sequence of events proposed for implementation according to the effectiveness of the invested (state) resources. The measures will be appraised by an environmental expert from the aspect of environmental influences. The provision of financial resources of the programme will be coordinated by an interdepartmental working group which was established at the MoA on the basis of government resolution No 496/2006. Without the positive standpoint of these three bodi-

es, the proposed measures cannot be financed from the resources of this programme.

Financial resources used where it will be efficacious to organise ownership relations in the territory dealt with or part thereof before the issue of building permission will be allocated for land alterations focussing on flood-prevention measures. These financial resources are also intended for changes of state land for simplifying the organisation of property-right relations for lands in the context of the implementation of the programme „Support for Flood Prevention II“. The content of land alterations is dealt with by section 2 of Act No 139/2002 Coll., concerning land alterations and land offices and concerning the amendment of Act No 229/1991 Coll., concerning the adjustment of ownership relations to land and other agricultural assets, as subsequently amended.

In 2006 work was performed on the preparation of a new EU directive on the evaluation and management of flood risks, and its adoption is anticipated in 2007.



PRIORITY TASKS IN WATER MANAGEMENT

5.

5.1 Priority tasks in water management

The preparation and processing of reports for the individual EU directives for the European Commission was also performed in 2006 in compliance with the performance of tasks arising from the implementation plan for the area of the environment and from the requirements of the Framework Directive.

In February 2006 the European Commission was given the Report on Drinking Water Quality in the Czech Republic for the period 2002 – 2004 pursuant to Directive No 98/83/EC, in the format of the decision of the Commission 95/337/EC. The authority responsible for the directive is the MoH in

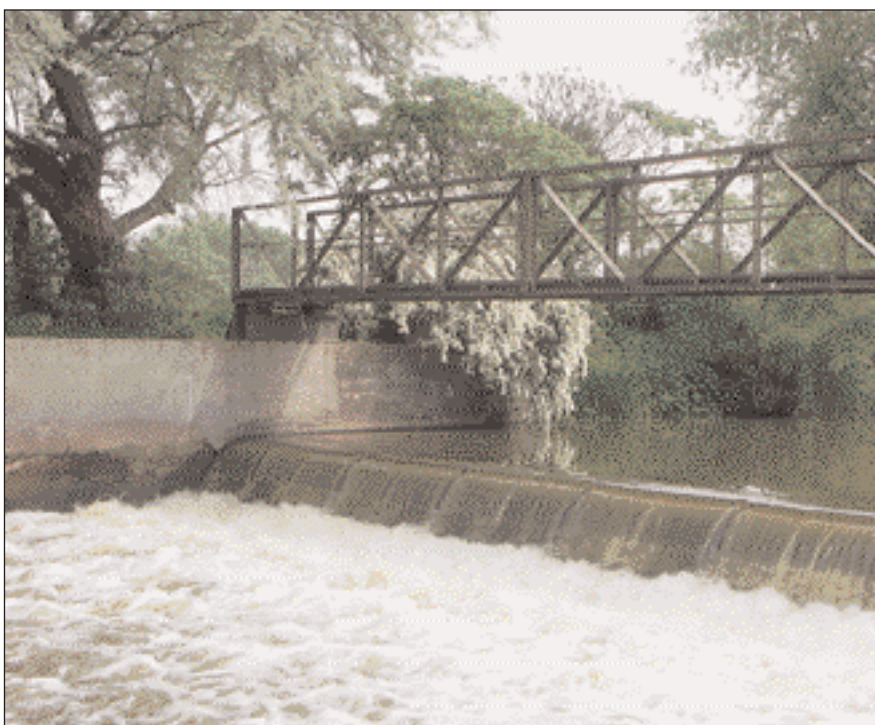
cooperation with the MoA, MoE and the State Nuclear Safety Institute. Pursuant to article 13 of Directive of 98/83/EC, on the quality of water intended for human consumption, the Czech Republic is obliged to give the European Commission a report on drinking water quality every three years. In 2006 the first such report was prepared, summarising the period of the years 2002 – 2004. As no format had been designated for the submission of reports pursuant to this directive, the European Commission designated that this report will be submitted in the format of the previous directive. Directive 98/83/EC requires reports on all the individual sources of water with an average capacity in excess of 1 000 m³ per day or those used by more than 5000 inhabitants (so-called supply area).

The report, processed for indicators given by annex I to the Directive, contains summarised information for the Czech Republic. It gives general information about the legal regulations adopted in the Czech Republic in order to meet the requirements of the directive, including adopted limits for the individual indicators designated in drinking water and brief information about the water quality control system.

When processing data it was ascertained that in the Czech Republic there are 268 supply areas with a daily capacity above 1 000 m³ (or used by more than 5000 persons), supplying approximately 7.3 million inhabitants, i.e., approximately 72 % of the population. The estimated amount of supplied water in these supply areas is approximately 532 million m³/year. From the aspect of the origin of drinking water, the report states that 35.96 % of the population is supplied from surface sources, 32.81 % from underground sources, and 31.23 % from mixed sources.

Another part of the report contains an overview of the overall quality of drinking water and its inspection, for example, number of tests performed in the individual indicators, number of compliant and non-compliant results, list of granted exceptions, list of all sources (supply areas) where there was an exceeding of the limits given by annex I of this directive, including ascertained minimum, average and maximum concentrations in the given indicator (more detailed information can be found on the pages of www.szu.cz, www.mzcr.cz).

In 2006 the Report of the Czech Republic on the implementation of Council Directive 76/160/EEC, concer-



Cidlina river, Sály



ning the quality of bathing water (the department responsible for the directive is the MoH, the report was processed in compliance with this directive, but in 2006 it was replaced by the new directive No 2006/7/EC, concerning the management of bathing water quality) was processed. The report on the quality of water used for the bathing of people and its most important characteristics for the recreational season 2006 was given to the European Commission in December 2006. The report is displayed every year on the portal of the European Commission (<http://ec.europa.eu>) after the incorporation of results. In the Czech Republic, natural recreational water used for the bathing of persons is divided up into surface water used for the bathing of persons, i.e., bathing areas (the list is given by Decree No 159/2003 Coll., which designates the surface water used for the bathing of persons, as amended by Decree No 168/2006 Coll.) and also natural bathing areas, operated in the sense of Act No 258/2000 Coll. For the purposes of Council Directive 76/160/EEC, concerning the quality of

bathing water, in 2006 the results of water quality were announced from 188 places used for the bathing of persons. A map of the localities can be found on the internet pages www.voda.mze.cz. In contrast with 2005, there was an overall increase by 12 localities, and 30 new places were added and 18 removed. The main reason for the removal was the low recreational use. Bathing water in concrete-lined reservoirs without a through flow, which have more of the character of a swimming pool, were excluded. At the reservoir Slezská Harta the number of consumption points was reduced with regard to the good quality of the water.

From the final report on the quality of bathing water sent to the EC it is evident that the quality of bathing water in areas announced for the EU displays an increasing trend in the Czech Republic. Water quality improved in 38 localities also monitored in 2005. This meant an increase in the number of areas which complied with the directive's requirements by 11 %. At the same time there was a reduction in the number of insufficiently sampled places. Out of 30 new

localities, 25 complied with the requirements of the directive. The most frequent problems with water quality were associated with the mass incidence of cyanobacteria, which lead to a bathing ban in certain areas. In the bathing season 2006 a total of 18 bathing bans were announced, all as the result of a mass incidence of cyanobacteria (of which 3 were at natural bathing places and 15 in bathing areas. The limit values for the indicator „cyanobacteria“ are given by annex No 2 of Decree No 135/2004 Coll., which designates the hygiene requirements for bathing places and saunas, and the hygiene limits of sand in sandpits of external play areas. The limits for this indicator were set by the decree referred to in compliance with the recommendation of the World Health Organisation (WHO), i.e., three-stage evaluation of water quality, where a ban is issued if the presence of aquatic bloom is evaluated by a visual inspection. No bathing ban was issued in the bathing season of 2006 in these localities as a result of microbiological water quality.

PRIORITY TASKS IN WATER MANAGEMENT

In view of the requirements of Czech legislation, non-compliant water quality was ascertained in certain bathing places and in certain bathing periods caused primarily by the excessive reproduction of cyanobacteria as a result of higher water temperature and nutrient (in particular phosphor) content. Specific measures focussing on certain bathing places have not yet been adopted in view of the character of the pollution. With regard to the fact that the number of issued bans in the Czech Republic far exceeds the European average, it will be necessary to perform an evaluation of this state. In the event that remedial measures of a specific character will be adopted, they will be incorporated in the relevant catchment area plan.

Over the evaluated period, the microbiological or physical-chemical water quality in bathing places of the Czech Republic complied with the requirements of Council Directive 76/160/EEC, concerning the quality of bathing water.

At the end of 2006 the Report pursuant to article 17 of Council Directive No 91/271/EEC, concerning urban waste-water treatment, or the updating of the Report from 2004 was prepared. The updated report of the Czech Republic about programmes for the implementation of the Directive apply, pursuant to the requirements of the European Commission, to 31.12.2004, and also include data as of the dates designated in the Accession Treaty for the transitional period for this Directive (31.12.2006 and 31.12.2010).

For agglomerations larger than 10 000 EI, the Czech Republic should ensure compliance with the Directive for the 18 named agglomerations as of the day of accession (1.5.2004), for 36 other agglomerations by 31.12.2006 (total of 54 agglomerations) and for the remaining agglomerations of this size by 31.12.2010. It involves these 54 agglomerations: Kuřim, Přelouč, Vlašim, Sušice, Turnov, Kralupy nad Vltavou, Český Těšín, Hranice, Trinec, Orlová, Šumperk, Krnov, Uherské Hradiště, Karviná, Znojmo, Olomouc, České Budějovice, Brno, Bystřice pod Hostýnem, Rychnov nad Kněžnou, Frenštát pod Radhoštěm, Uničov, Kyjov, Vysoké Mýto, Zábřeh, Vrchla-

bí, Veselí nad Moravou, Lovosice, Roudnice nad Labem, Ústí nad Orlicí, Vyškov, Litoměřice, Moravská Třebová, Žďár nad Sázavou, Písek, Polička, Bruntál, Kopřivnice, Rakovník, Nový Jičín, Vsetín, Kolín, Benešov, Chrudim, Trutnov, Kroměříž, Hodonín, Děčín, Teplice, Most, Přerov, Havířov, Zlín and Ústí nad Labem. In these agglomerations the WWTP comply with the requirements of the Directive and the percentage of inhabitants connected to waste water treatment plants, and the remaining percentage of inhabitants is dealt with by an individual method of treatment, and in the future may be connected to a WWTP.

5.2 Project of public administration information system – WATER

In 2006 the Ministry of Agriculture and Ministry of the Environment continued in the implementation of the interdepartmental project called public administration information system – WATER, which was officially initiated in 2005. The systematic building up of Central Records of watercourses became a basic element of work in 2006. The main aim of this interdepartmental project PAIS – WATER remains an attempt to give the general public sufficient credible and relevant information about water for decision making, education and general information, if possible in a unified and effective manner and in one place.

The individual departments, i.e., the MoA and MoE implement and finance their project tasks (on the basis of approved documents in the Steering Committee of the project and meeting of ministry heads). The overview of all project tasks (records) from the area of water management which the departments are obliged to publish in the framework of the PAIS is given by the provision of section 21 of the water act. The scope of data in the individual records of

the state of surface water and groundwater, the method of processing, saving and passing on of this data is contained in the PAIS in Decree No 391/2004 Coll.

On the basis of the approved documents and created three-level organisational structures, in 2006 the meeting of the project River Committee and two meetings of the project Coordination Team were held, and there were ongoing working discussions of the individual project teams dealing with the actual matter of agreed project tasks.

In the same way as in the preceding year, the main classification of the internet pages of the Water Management Information Portal into three tabs was preserved, these being:

- Current information
- Records of PAIS
- Project PAIS – WATER

Within the context of „Current information“, in 2006 the MoA initiated the preparation of the updating of the current applications, in particular the States and Flows in Watercourses, States and Flows in Reservoirs and Rainfall. In this context the discussions of the project team were held the aim of which was agreeing the presentation of the indicator „drought“ in the framework of the current application „States and Flows in Watercourses“ characterising average daily flow, which is attained or exceeded on average 355 days in the year. At the same time the replacement of the existing presentation of the application „States and Flows in Reservoirs“ by a new application, this being „Water Levels in Watercourses“, which is based on the water level in the individual spaces of a reservoir, was agreed. Many design changes were made which also applied to the application „Rainfall“, which gives current information about hourly rainfall totals.

In the tab „Records of PAIS“, in 2006 the MoA participated in the implementation of the following planned project tasks, which were successfully and duly performed in the planned dates. The central part of the work applied primarily to the building up of Central Records

PRIORITY TASKS IN WATER MANAGEMENT

of Watercourses (referred to hereinafter as the „CRWC“). The CRWC watercourse layer is the basic supporting and linking record of PAIS – WATER and will be used for further territorial links of phenomena of other records and for the subsequent updating of layers of watercourses in linked public administration information systems. The central records are composed as a view of the individual records of individual watercourse administrators, i.e., the river board corporations, the AWMA and Forests of the Czech Republic, s.e. Thus the activities of catchment area administrators in the first stage of the work focussed on performing the transfer and implementation of the initial layer of watercourses on a scale of 1:10 000 to their operational-information systems, and subsequently in the second stage of work there was an identification of watercourses administered by the river board corporations (administration) and preparation for the

availability of non-graphic and graphic parts of the CRWC for the portal PAIS – WATER.

In addition, the Records of Small Reservoirs administered by the AWMA (approximately 400 reservoirs) were also made accessible, which resulted in an expansion of the already presented data about reservoirs administered by the river board corporations, i.e., reservoirs with a volume of headed up or accumulated water exceeding 1 million m³, reservoirs on important watercourses and water management reservoirs.

Work was also performed on the processing of clear information Records of Waterworks in water management melioration lands from the sources of the AWMA. In this context the technological draft for the identification of water management lands occurred in the input information of the Digital Water Management Database provided for the creation of the CEVT, including processing of

draft procedure and method for filling objects from the current records of the administrator of the AWMA records.

In 2006 great attention was also given to the Central Technical Records of Phenomena, the aim of which as a preparation of presentation of selected phenomena of the state river board corporations within the context of PAIS – WATER, including making accessible the individual norms for phenomena of the state river board corporations. In this context in 2006 work was managed in the project team dealing with the processing of a draft of selected phenomena of technical records and methods of their presentation.

Within the framework of Central Records of Water Law Decisions, in 2006 work was performed applying primarily to the system updating of data and regular statistical evaluations.

The department MoE is entrusted with keeping a total of 12 sets of



WWTP, Hodonín



Vltava river, Český Krumlov

records within the framework of the interdepartmental project PAIS – WATER, which give information about the state of surface water and groundwater. These are primarily records of hydrogeological areas, records of water formations, including heavily influenced water formations and artificial water formations, records of the state of water formations of surface water and groundwater (from 2010), records of the ecological potential of heavily influenced and artificial water formations (from 2010), records of protected areas of the natural accumulation of water, records of protective bands of water sources, records of sensitive areas, records of vulnerable areas, records of areas of surface water used for bathing, records of flood territories, records of surface water which is or may become permanently suitable for the life and reproduction of native species of fish and other aquatic organisms and

records of the quality of surface water in the state monitoring network. The first filling of the aforementioned records (pursuant to Decree No 391/2004 Coll.) with available data occurred (with the exception of records deferred by decree to 2010) in the years 2004 and 2005. In 2006 these records were transferred to new scales, primarily the scale 1:10 000 for surface water and 1:50 000 for groundwater.

There was also an updating of the records of water formations (surface water and groundwater) and records of the surface water used for bathing. At the same time a new version of the records of hydrogeological areas was prepared for publication on the portal WATER, and the records of flood areas were gradually added to. In 2006 work began on the accessibility of attribution data in the format XML, and there was a verification of the technology of their transfer. The processing and addition of

metadata continued in compliance with ČSN ISO 19115 Geographic information – metadata (once again including making it accessible in the format XML).

All the outputs of the project PAIS – WATER are regularly published on the Water Management Information Portal – WATER. Through these pages the departments offer data about water management in the Czech Republic. This is clear, easily accessible and comprehensible data which is or can be both interesting and absolutely fundamental for all citizens of the Czech Republic. Information about levels and water quality in our reservoirs, the amount of rainfall etc. are also presented in a highly interesting manner. The pages are an interesting and sought-after source of information for those participating in water sports, anglers, holidaymakers and the professional and general public.

www.voda.mze.cz, www.voda.env.cz

VODA
NEBU
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Renovatus fons. 1863.

Expositio. 2. et 3. Aprilis.



PRAMEN
PODLE
POVĚSTI SE
K TOMUTO PRA
MENI VZTAHUJE
POJMENOVÁNÍ
A ZALOŽENÍ
MĚSTA

WATER SUPPLY AND SEWERAGE SYSTEMS

6

6.1 Drinking water supply

In 2006, 9.5 million inhabitants, i.e., 92.4 % of the entire population of the Czech Republic were supplied from water supply systems.

In all water supply systems 698.7 million m³ of drinking water was produced. 528.1 million m³ of drinking water was delivered for a charge (invoiced), of which 337.4 million m³ of drinking water was for households. Drinking water losses reached 143.8 million m³, i.e., 20.7 % of the water intended for implementation.

As source information, data of the CSO was primarily used. Data supplied by the CSO was acquired on the basis of a set of 240 so-called professional observers (not municipalities) and 971 municipalities which operate water supply and sewerage systems themselves. Thus overall the CSO set for 2006 consists of the data of 1211 operators augmented with data gained by expert statistical methods.

In view of the fact that the CSO no longer published primary data ascertained in the statements VH 8b-01, since

2004 all data is given as completed calculations.

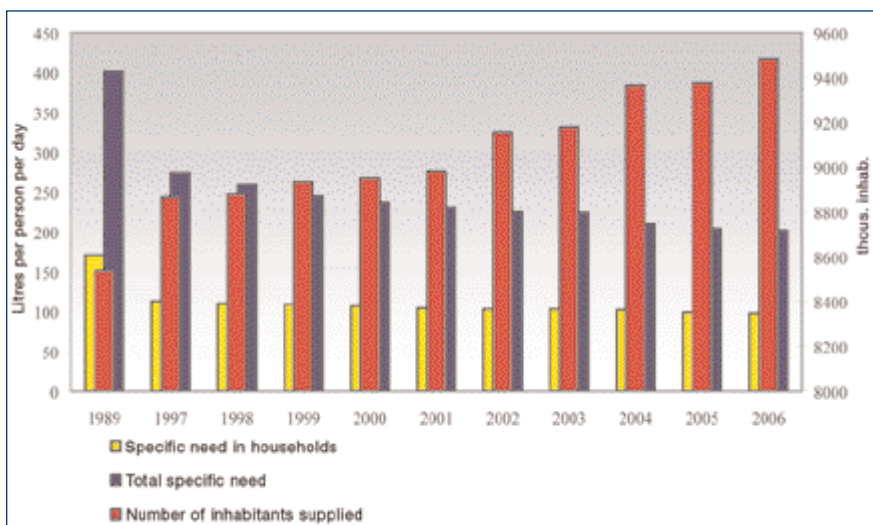
Trends and development indicators in the field of drinking water supply are displayed in Table 6.1.1 and Graph 6.1.1.

The continuous drop in water manufactured virtually came to a standstill in

2006, when in comparison with the year 2005 the volume of water produced fell by only 177 thousand m³. But the trend of the drop in invoiced water continues. The significant drop in the reduction of water losses in the pipe network is given by the fact that restricting losses by financially undemanding measures has

Graph 6.1.1

Development in the number of supplied inhabitants and specific need of invoiced water in the years 1989 and 1997 – 2006



Source: CSO

Table 6.1.1

Supply of water from water supply systems in the years 1989 and 2000 – 2006

Indicator	Unit of measurement	1989	2000	2001	2002	2003	2004	2005	2006
Inhabitants (median state)	thous. inhab.	10 364	10 273	10 287	10 201	10 201	10 207	10 234	10 267
Inhabitants truly supplied with water from water supply systems	thous. inhab.	8 537	8 952	8 981	9 156	9 179	9 346	9 376	9 483
	%	82,4	87,1	87,3	89,8	89,8	91,6	91,6	92,4
Water produced from water supply systems	million m ³ /year	1 251	778	754	753	751	720	699	699
	% as of 1989	100,0	62,2	60,3	60,2	60,0	57,6	55,9	55,9
Total invoiced water	million m ³ /year	929,4	554,1	535,6	545,3	547,2	543,5	531,6	528,1
	% as of 1989	100,0	59,6	57,6	58,7	58,9	58,5	57,2	56,8
Specific need from produced water	l/person day	401	237	231	225	224	211	204	202
	% as of 1989	100,0	59,1	57,5	56,1	55,9	52,6	50,9	50,4
Specific amount of water invoiced in total	l/person day	298	169	164	163	163	159	155	153
	% as of 1989	100,0	56,7	54,9	54,7	54,7	53,4	52,0	51,3
Specific amount of water invoiced for households	l/person day	171	107	104	103	103	102	98,9	97,5
	% as of 1989	100,0	62,6	60,7	60,2	60,2	59,6	57,8	57,0
Loss of water per 1 km of piping	l/km day	16 842 *)	9 706 *)	9 141 *)	8 358 *)	7 783 *)	6 113	5 770	5 673
Loss of water per 1 supplied inhabitant	l/person day	90 *)	60 *)	57 *)	53 *)	52 *)	45	43	42

Source: CSO

Note.: *) Data for water supply systems of main operator.



WWTP Hodonín

evidently been exhausted. Specific amounts of water invoiced for one supplied inhabitant reduced to 153 l/person/day and the specific consumption of drinking water in households fell to 97.5 l/person/day. But it is possible that these relatively low values of specific consumption also result from a possibly higher number of truly connected inhabitants.

The greatest proportion of inhabitants supplied with drinking water from water supply systems in 2006 was in the Capital Prague (99.2 %) and in the Karlovy Vary region (98.4 %), the lowest proportion of inhabitants supplied with drinking water is in the Plzeň region (82.4 %) and the Central Bohemia Region (82.8 %).

The length of the water supply network in 2006 was extended by a total of 77 km and reached a length of 69 435 km.

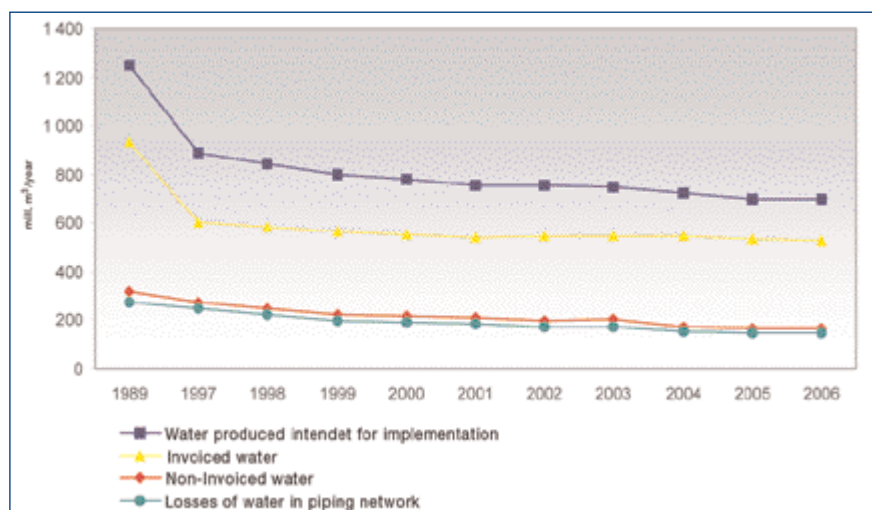
The number of water supply systems decreased by 43 and reached the number of 4 411 (the reason for the reduction was the connection of water supply systems with a separate source of water into group water supply systems).

The number of water supply connections increased by 31 517 and reached the number of 1 781 970.

The number of installed water meters increased by 24 143 and reached the number of 1 811 776.

Graph 6.1.2

Development of values for volume of water produced from water supply systems and total invoiced water in the years 1989 and 1997 – 2006



Source: CSO

Table 6.1.2

Supply of inhabitants, production and delivery of water from water supply systems in 2006

Region, territory	Inhabitants		Water produced from water supply system	Water invoiced	
	Truly supplied water from water supply system	Proportion of inhabitants supplied with water out of total number		Total	Of this for households
	(number)	(thous. m³)	(thousand m³)	(thous. m³)	(thous. m³)
Capital Prague	1 174 000	99,2	131 366	87 623	55 686
Central Bohemia region	965 707	82,8	49 808	47 236	31 391
South Bohemia region	573 550	91,2	38 330	28 915	18 737
Plzeň region	455 800	82,4	34 465	27 784	16 099
Karlovy Vary region	299 729	98,4	23 718	17 520	10 991
Ústí nad Labem region	789 191	95,9	64 104	45 221	28 325
Liberec region	380 744	88,6	31 266	22 151	13 268
Hradec Králové region	500 571	91,2	35 763	26 651	16 860
Pardubice region	485 548	95,8	31 965	25 055	15 498
Vysočina region	476 185	93,2	27 341	23 390	14 623
South Moravia region	1 072 513	94,8	70 435	55 710	36 473
Olomouc region	561 963	87,9	32 728	27 178	17 987
Zlín region	528 863	89,7	33 964	26 230	16 162
Moravia – Silesia region	1 218 315	97,5	93 420	67 405	45 310
Czech Republic	9 482 679	92,4	698 673	528 070	337 410

Source: CSO

Table 6.2.1

Removal and treatment of waste water from sewerage systems in the years 1989 and 2000 – 2006

Indicator	Unit of measurement	Year							
		1989	2000	2001	2002	2003	2004	2005	2006
Inhabitants (median state)	thous. inhab.	10 364	10 273	10 287	10 201	10 201	10 207	10 234	10 267
Inhabitants living in houses connected to sewerage systems for public need	thous. inhab.	7 501	7 685	7 706	7 899	7 928	7 947	8 099	8 215
	%	72,4	74,8	74,9	77,4	77,7	77,9	79,1	80,0
Waste water discharged into sewerage systems for public need (without rainwater) total	mill. m ³	877,8	576,0	570,7	576,3	558,1	539,7	543,4	541,9
	% as of 1989	100,0	65,6	65,0	65,7	63,6	61,5	61,9	61,7
Treated waste water including rainwater ¹⁾	mill. m ³	897,4	808,8	841,4	846,2	782,7	821,5	841,5	857,4
Total treated waste water excluding rainwater	mill. m ³	627,0	546,1	544,8	533,6	527,4	509,7	513,9	510,3
	% as of 1989	100,0	87,1	86,9	85,1	84,1	81,3	82,0	81,4
Proportion of treated waste water without rainwater ²⁾	%	71,5	94,8	95,5	92,6	94,5	94,4	94,6	94,2
Ratio of treated waste water to untreated waste water without rainwater	–	2,51	18,30	21,21	12,50	17,18	16,98	17,44	16,26

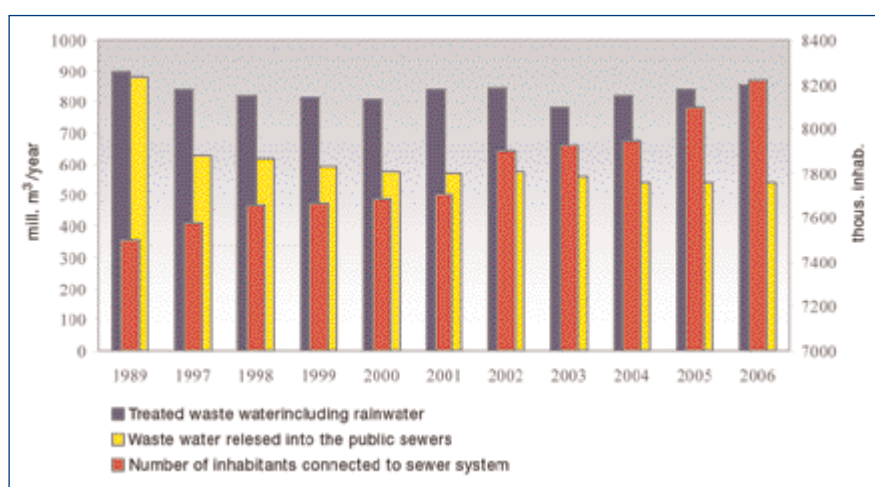
Source: CSO

Note: ¹⁾ In 1989 and 1999 to 2003 it involved data for sewer systems of main operators.

²⁾ Involves share of water discharged into sewer system.

Graph 6.2.1

Development of number of inhabitants living in houses connected to a sewerage system and amount of discharged and treated waste water in the years 1989 and 1997 – 2006



Source: CSO

Table 6.2.2

Number of inhabitants living in houses connected to sewerage systems and amount of discharged and treated waste water in 2006 in the individual regions

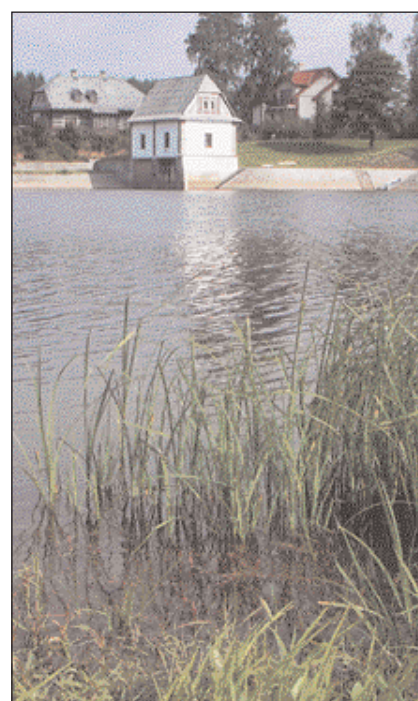
Region, territory	Inhabitants living in houses connected to sewerage systems for public need		Waste water discharged into sewerage systems for public need	Treated waste water without rainwater	
	Total	proportion out of overall number of inhabitants		Total	Proportion
	(number)	(%)	(thous. m ³)	(thous. m ³)	(%)
Capital Prague	1 172 240	99,0	83 064	83 046	99,9
Central Bohemia region	770 481	66,0	53 670	53 471	99,6
South Bohemia region	525 739	83,6	36 996	35 135	95,0
Píseň region	432 001	78,1	34 379	30 617	89,1
Karlovy Vary region	279 115	91,6	15 661	15 561	99,4
Ústí nad Labem region	674 206	81,9	39 415	36 257	92,0
Liberec region	295 658	68,8	18 525	18 389	99,3
Hradec Králové region	401 301	73,1	26 942	25 248	93,7
Pardubice region	348 314	68,7	21 988	20 891	95,0
Vysočina region	435 259	85,2	24 515	17 954	73,2
South Moravia region	951 439	84,1	54 098	51 768	95,7
Olomouc region	474 844	74,3	29 636	27 995	94,5
Zlín region	480 362	81,4	26 929	23 593	87,6
Moravia-Silesia region	973 777	77,9	76 122	70 355	92,4
Czech Republic	8 214 734	80,0	541 939	510 280	94,2

Source: CSO

6.2 Removal and treatment of communal waste water

In 2006, 8.2 million inhabitants of the Czech Republic lived in houses connected to sewerage systems. A total of 542 million m³ of waste water was discharged into sewerage systems. Of this amount of waste water, 94.2 % (not including rainwater) was treated, which represents 510.3 million m³.

The trends of development in sewerage and the treatment of waste water are documented over the longer timescale by Table 6.2.1 and Graph 6.2.1.



The greatest proportion of inhabitants connected to sewerage systems is in the Capital Prague (99 %) and the Karlovy Vary region (91.6 %), the lowest proportion is in the Central Bohemia region (66 %) and the Pardubice region (68.7 %).

The length of the sewerage system was extended by 396 km

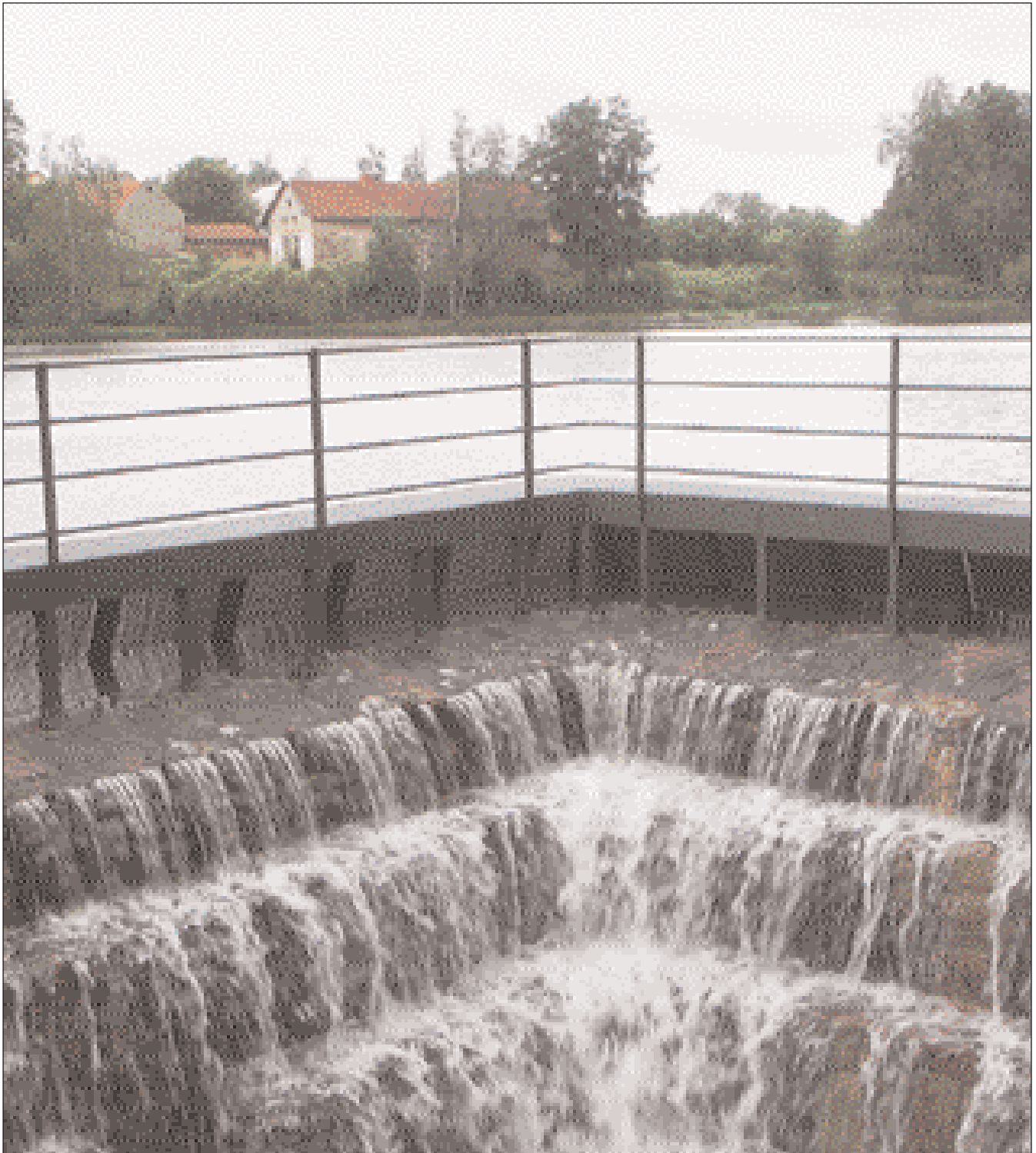
and reached the length of 36 629 km.

According to the data of the CSO, the total number of waste water treatment plants increased by 23 in comparison with the preceding year 2005 to a number of 2017. This data is distorted by non-adherence to the instructions for reporting units. The given data about the increase is lower, because the

data of 2005 also includes some household WWTPs.

6.3 Development of water supply and sewerage charges

In 2006 the average water supply charge (including VAT) ascertained by the Czech Statistical Offi-



Onomyšlský stream, fishpond Žišov

ce was CZK 23.38/m³ and the average sewerage charge was CZK 19.33/m³, which in comparison with 2005 represents a price increase for water supply charges by 4 % and sewerage charges by 6.6 %.

The amendment to Act No 76/2006 Coll., which amended Act No 274/2001 concerning water supply and sewerage systems for public use, now designates the duty of the owners or operators to send the MoA every year, by 30.6. of the calendar year at the latest, full information about the complete billing of all items of the calculation of the price for water supply and sewerage charges in the preceding calendar year. In connection with this new duty, selected operators were not asked to send the calculation of the price as they had in preceding years. In view of the fact that billing will send by the given subjects to the MoA for the first time in 2007, the data of the CSO was used for the overview of water supply and sewerage charges.

Table 6.3.1 is assembled on the basis of data processed by the CSO. In view of the fact that in its statements the CSO monitors only revenues for water supply and sewerage charges, it is not possible to perform a more detailed analysis as it was in previous years.



WWTP Kralupy nad Vltavou

Table 6.3.1
Implementation prices for water supply and sewerage charges in 2005 and 2006

Indicator	Unit	2005	2006	Index 2006/2005
Total water supply charge	mill. CZK	11 938	12 349	1,03
Total invoiced water	mill. m ³ /year	532	528	0,99
Average price of water supply charge	CZK/m ³	22,46	23,38	1,04
Total sewer charge	mill. CZK	9 859	10 477	1,06
Waste water discharged into sewers	mil. m ³ /year	543	542	1,00
Average price for sewer charge	CZK/m ³	18,14	19,33	1,07

Source: CSO

Note.: In comparison with the data processed by the MoA for the same year, the water and sewerage charges gained by the CSO for the year 2005 are lower. The difference is caused by the number of addressed respondents. The CSO addresses a larger number of operators, including municipalities, which generally have water supply and sewerage charges lower than the average market price, and they subsidise this from the municipal budget. Total water supply and total sewerage charges do not include outstanding payments of consumers.



WWTP Hranice



SOURCES OF POLLUTION AND WATER PROTECTION

7.1 Point sources of pollution

The quality of surface water is primarily influenced by point sources of pollution (towns and municipalities, industrial plants and objects of concentrated agricultural animal production).

The level of protection against pollution is most frequently evaluated according to the development of produced and discharged pollution. Produced pollution is the amount of pollution contained in produced (untreated) waste water. In the context of the requirements of the EU and OECD, in recent years the development of produced pollution has received increased attention in the Czech Republic. There has main-

ly been an expanded collection of measured data from a greater number of subjects. This expands and makes more accurate the data about produced pollution. In 2006 the production of organic pollution according to the biochemical consumption of oxygen (BCO_5) in comparison with 2005 fell by 2818 t (by 1.1 %), and in the indicator of dissolved inorganic salts (DIS) by 41 298 t (by 4.5 %). In the indicator of chemical consumption of oxygen designated by the dichrome method (CCO_{Cr}) in comparison with 2004 there was an increase by 19,133 t (by 3.3 %), and for suspended substances (SS) by 19,871 t (by 7.1 %).

Discharged pollution is the pollution contained in waste water discharged into surface water. In comparison with 2005, discharged pollution in 2006 decreased in

the indicators: BCO_5 by 747 t (by 7.8 %). But in contrast with this there was an increase in discharged pollution in the indicators CCO_{Cr} by 815 t (by 1.5 %), and SS by 1316 t (by 7.7 %), for DIS by 17 615 t (by 2 %). The falling trend of discharged pollution according to BCO_5 continued in 2006. There was a reduction in nearly all catchment areas. There was an increase in the discharged pollution in the indicators CCO_{Cr} in the catchment area of the Elbe, Ohře and the Odra, SS in the catchment area of the Morava and Odra and DIS in the catchment area of the Elbe, Vltava and Morava. The reduction occurred in almost all river catchment areas. The development of discharged and charged for pollution since 1990 is displayed by Graph 7.1.1.

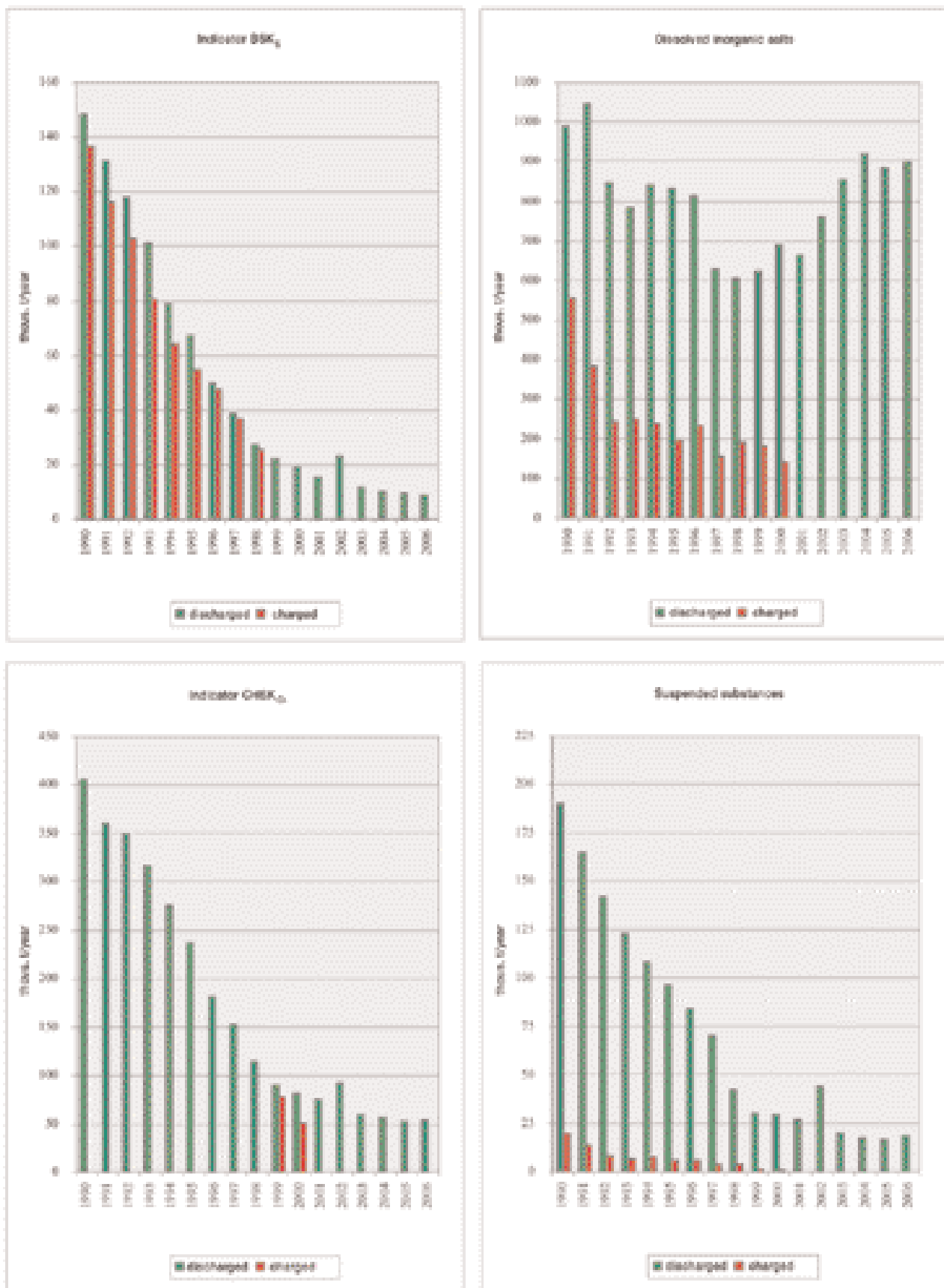
In the communal sphere in 2006 in comparison with 2005 there was a signifi-



Labe river, Valtířov

SOURCES OF POLLUTION AND WATER PROTECTION

Graph 7.1.1
Discharged and charged for pollution 1990 – 2006



Source: WMRI from data of CSO, River Bords, s.e.

cant reduction of discharged pollution at Klášterec nad Ohří (by 337 t CCO_{Cr} and 140 t BCO_5), Ústí nad Labem – public sewers apart from WWTP untreated waste water by 161 t CCO_{Cr} and 77 t BCO_5 and at Kadaň (by 111 t CCO_{Cr} and 42 t BCO_5), and in the industrial sphere there was a significant reduction in discharged pollution at Lovochemie Lovosice (outflow A) (by 228 t CCO_{Cr}), Olšanské papírny paper mills Aloisov (by 52 t CCO_{Cr} and 57 t BCO_5) and at papírny Štětí paper mills (by 75 t CCO_{Cr}). But there was an increase in the value of discharged pollution at BIOCEL Paskov (by 865 t CCO_{Cr}).

Between the years 1990 and 2006 there was a drop in discharged pollution BCO_5 by 94 %, CCO_{Cr} by 86.8 %, SS by 90.3 % and DIS by 8.9 %, and there was also success in reducing the amount of dangerous and especially dangerous substances and discharged amount of AOX (adsorbable organically bound halogens). There was also a significant drop in macronutrients (nitrogen, phosphorous) as a result of the fact that the biological removal of nitrogen and biological or chemical elimination of phosphorous is being applied in a targeted manner in the technology of waste water treatment in new and intensified waste water treatment plants.

7.2 Broad area pollution

The quality of groundwater and surface water is also significantly impacted by broad area pollution – in particular pollution from farming, atmospheric deposits and erosion wash-loads from the terrain.

The significance of broad area pollution is increasing with the continuing drop in pollution from point sources. Its proportion is fundamental especially for nitrates, pesticides and acidification, and less so for phosphorous, and it differs in the different areas of the Czech Republic depending on population density, the proportion of treatment of discharged waste water, the intensity and method of farming and level of atmospheric deposits.

7.3 Accident pollution

Accident pollution also negatively impacts the quality of surface water and groundwater. In 2006, the Czech Environmental Inspectorate recorded a total of 205 cases of accident pollution or threat to water quality, of this 4 cases in groundwater, on the territory of the Czech Republic.

In comparison with 2005, the number of accidents on water is 59 cases less. The most frequent group of pollutants continue to be oils (49.3 % of the overall number of recorded cases), fol-

lowed by chemical substances (not including heavy metals) – 14.1%. In a breakdown according to sources of accidents, the most common were accidents caused by transport (15.1 %), followed by accidents during the elimination of waste water and solid waste (3.4 %), agriculture hunting and associated activities (3.4 %). The source could not be ascertained in 66.4 % of cases (in 2005 it had been 62.1% of cases). In 2006, the Czech Environmental Inspectorate (CEI) imposed a total of 692 fines for breaches of regulations valid in water management, of which 628 have become legally valid, the overall amount was almost CZK 35.5 million.





STATE FINANCIAL SUPPORT FOR WATER MANAGEMENT

8.1 Financial support of Ministry of Agriculture

In 2006 in the context of the programmes of the Ministry of Agriculture 229 030 – „Construction and Technical Renewal of Water Supply Systems and Water Treatment Plants“, 229 040 – „Construction and Technical Renewal of Waste Water Treatment Plants and Sewerage Systems“ and 229 310 – „Construction and Renewal of Infrastructure of Water Supply Systems and Sewers“ focussing on the implementation of measures to fulfil the directives of the EU in the field of water supply systems

Table 8.1.1

Financial resources of state budget provided in the context of the programmes of the MoA 229 030 (229 312), 229 040 (229 313) and 229 810 in 2006 in thous. CZK

Form of support	Water supply systems and water treatment plants	Sewerage systems and waste water treatment plants	Renewal of water supply systems and sewerage flood of 08/2002	MoA total
Refundable financial assistance	0	0	0	0
Grants	485 396	425 678	13 702	924 776
Total	485 396	425 678	13 702	924 776

Source: MoA

Table 8.1.2

Development of state support for construction of water supply systems, treatment plants, sewerage systems and waste water treatment plants in the context of the MoA in the years 2003 – 2006 in million CZK

Financial source	2003	2004	2005	2006
Refundable financial assistance	6	4	0	0
Grants of state budget	1 531	1 563	1 746	925
Support of state budget	1 537	1 567	1 746	925
Advantageous loan	619	653	754	486
Support – total	2 156	2 220	2 500	1 411

Source: MoA



Otava river, Písek

and sewerage systems, and for the actual development of the field of water supply systems and sewerage systems, support was provided at an overall level of approximately CZK 1.4 billion.

Programme 229 310 is a new grant programme of the MoA which, according to the approved documentation, will run in the years 2006 – 2010 and replaces the winding down programmes 229 030 and 229 040.

This support was provided to investors both in the form of a grant and in the form of interest-free loans from sources of loan resources from the EIB or Council of Europe Development Bank (CEB). Within the context of programmes of the MoA 229 030 and 229 312 (measures focussing on water supply systems) in 2006 a total of 172 events in a total value of approximately CZK 485 million were supported from the state budget, and in the context of programmes of the MoA

STATE FINANCIAL SUPPORT FOR WATER MANAGEMENT

229 040 and 229 313 (measures focusing on sewers) in 2006 a total of 89 events in a total value of approximately CZK 426 million were supported from the state budget.

Within the context of programme 229 810 – „State Assistance for Renewal of Territory Affected by Flood of the Year 2002 Provided by the MoA“, focussing on the renewal and securing of water management infrastructure of water supply systems and sewerage systems, in 2006 support was provided in the form of a grant for the last event financed in the context of this programme, this being in the amount of approximately CZK 14 million. This programme was terminated in 2006, and in the years 2002 – 2006 support was provided to a total of 169 events of the specified programme in a total value of almost CZK 1 623 million.

In 2006, the successful drawing of the loan provided to the Czech Republic from the EIB on the basis of the loan contract „Czech Republic – Framework Loan for Water Management Intended for the Reconstruction, Improvement, Modernisation and Expansion of Water Management Systems in the Czech Republic“, and also of the loan of the CEB, continued, which was implemented on the basis of Ruling of the

Table 8.1.3

State financial resources provided by the MoA for capital and ongoing expenses in the context of programme financing in the programmes 229 060, 229 110 and 229 210 in thous. CZK

Registration number of programme	Name of programme	Expenditure on financing of programmes
229 060	Flood prevention	752 191
229 110	Rectifying consequences of flood on state water management assets	67 351
229 210	Renewal, dredging and reconstruction of fishponds and reservoirs	330 269

Source: MoA

Table 8.1.4

Non-investment support for other measures in water management provided by MoA in thous. CZK

Name of support	Level of provided support	Recipient of support
Administration of small watercourses *)	102 020	ZVHS
Administration of main drainage facilities *)	29 011	ZVHS

Source: MoA

Note: *) maintenance also included.

Government of the Czech Republic No 1179 from the year 1999. In 2006, a total of 63 events were supported from the aforementioned loans to a total extent of CZK 486 million.

In 2006, the Ministry of Agriculture continued in the implementation of many other programmes outside the area of water management infrastructure of water supply systems and sewerage systems the aim of which was in particular the renewal of

water management assets of administrators of watercourses in the context of the rectification of the consequences of floods from previous years and implementation of flood-prevention measures, the renewal, dredging and reconstruction of fishponds and reservoirs and ensuring care for state assets on small watercourses and on main drainage facilities.

The use of state financial resources for capital and ongoing expenses is given in the following tables 8.1.3, 8.1.4, 8.1.5, 8.1.6, 8.1.7, 8.1.8 and 8.1.9.

Within the context of programme 229 060 – „Flood Prevention“ as of the end of 2006, 172 events had been implemented, and 106 investment constructions had been partly completed. In addition a total of 6 studies of drainage conditions, flood territories and studies of special catchment areas had been completed.

In the following overview we give some of the more important events performed in the context of programme 229 060 referred to:

Morava River Board, s.e.

- Repair to breach of dyke of water-works Mostišťe



Labe river, spring

Table 8.1.5

Utilisation of financial resources for flood prevention within the programme 229 060 – „Flood prevention“ in thous. CZK

Owners and administrators	Utilisation in 2006	
	Investments	Non-investments
Elbe River Board, s.e.	185 660	0
Vltava River Board, s.e.	2 675	0
Ohře River Board, s.e.	1 500	0
Odra River Board, s.e.	130 022	0
Morava River Board, s.e.	343 620	6 000
Forests of the Czech Republic, s.e.	1 383	0
AWMA	67 961	0
Administrators of small watercourses – municipalities	13 370	0
Total	746 191	6 000

Source: MoA

Table 8.1.6

Utilisation of financial resources in the context of the sub-programme 229 113 – „Rectifying Consequences of Flood of 2002“ in thous. CZK

Owners and administrators	Utilisation in 2006	
	Investments	Investments
Elbe River Board, s.e.	0	0
Morava River Board, s.e.	0	0
Ohře River Board, s.e.	19 105	0
Vltava River Board, s.e.	0	0
Forests of the Czech Republic, s.e.	0	0
AWMA	1 084	0
Total	20 189	0

Source: MoA

Table 8.1.7

Utilisation of financial resources in the context of the sub-programme 229 114 – „Rectifying consequences of flood of year 2006“ in thous. CZK

Owners and administrators	Utilisation in 2006	
	Investments	Investments
Elbe River Board, s.e.	0	0
Morava River Board, s.e.	3 207	13 311
Ohře River Board, s.e.	0	0
Vltava River Board, s.e.	0	10 934
Odra River Board, s.e.	0	0
Forests of the Czech Republic, s.e.	350	6 605
AWMA	1 597	11 158
Total	5 154	42 008

Source: MoA

Table 8.1.8

Utilisation of financial resources in the context of the programme 229 212 in thous. CZK

Owners and administrators	Utilisation in 2006	
	Investments	Investments
Legal persons	19 432	232 283
Natural persons	16 714	46 367
Grant-funded organisations	1 035	5 424
Total	37 181	284 074

Source: MoA

Table 8.1.9

Utilisation of financial resources in the context of the programme 229 218 in thous. CZK

Owners and administrators	Utilisation in 2006	
	Investments	Investments
Legal persons	9 014	0
Natural persons	0	0
Total	9 014	0

Source: MoA

**Doubrava river, Mladotice**

Time of implementation: 7/05 – 11/06.

Total costs: CZK 54.621 million, invested by the year 2006: CZK 54.621 million.

The waterworks Mostišť is a multi-purpose reservoir on the river Oslava ensuring minimal flows on the Oslava, abstractions of water for water management purposes, energy use and the reduction of flood flows. When the levels in the reservoir were high, the amount of water seeping into the grout gallery gradually increased. The proposed repair should eliminate the fault of the sealing core. In 2006 the repair of the dyke was completed, as was the repair of the safety spillway.

- Morava, Olomouc – 1st stage
Time of implementation: 11/02 – 6/08.

Total costs: CZK 273.296 million, invested by the year 2006: CZK 186.056 million.

During the flood in 1997, 1/3 of the urban built-up area of Olomouc, which had gradually been built over the years and had caused a significant restriction of the space for the river Morava, was flooded. The purpose of this construction is the flood protection of the city, designed in such a way as to fit in with the concept

for the solution of the flood prevention measures of the entire river Morava catchment area upstream and downstream of Olomouc.

- Moravská Sázava, polder Žichlínek
Time of implementation: 6/02 – 6/08.

Total costs: CZK 298.311 million, invested by the year 2006: CZK 109.19 million.

The polder Žichlínek is part of the system of polders and revitalisation measures designed in the upper part of the river catchment area, the effects of which are expressed by the transformation of flood flows in the lower lying areas by a reduction in flow of 20 % – 30 % of total volume, which results in a strengthening of flood protection in the associated territories, municipalities and towns such as Olomouc and Litovel.

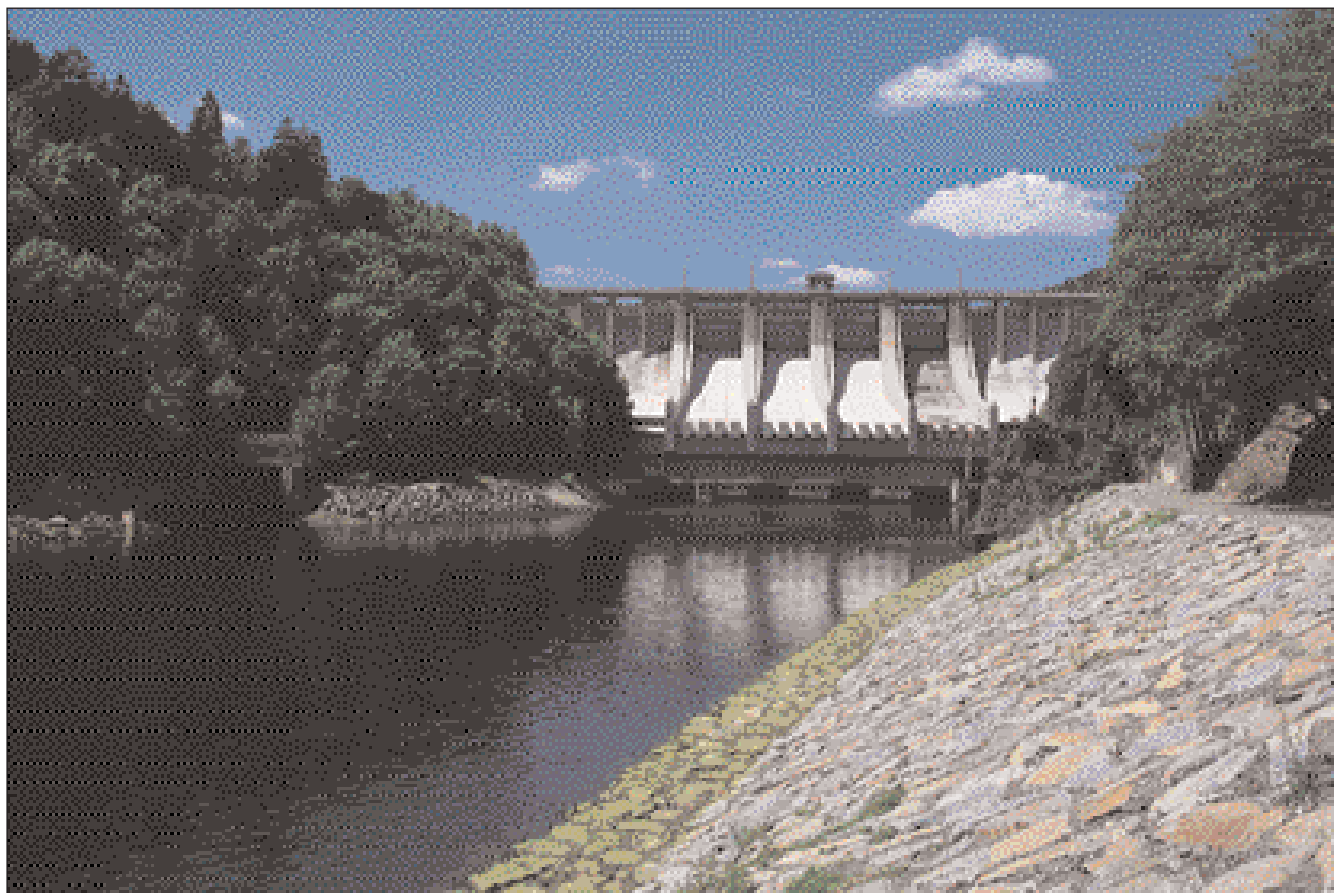
Elbe River Board, s.e.

- Elbe, Pardubice, channel dredging, weir Loučná

Time of implementation: 4/05 – 12/06.

Total costs: CZK 69.158 thous., invested by the year 2006: CZK 66.998 million.

The construction is an integral and necessary part of the implementation of



Vltava river, WW Slapy

the set of constructions and measures which are to ensure the flood protection of Pardubice from Q_{100} of the rivers Elbe and Chrudimka by increasing the capacity of the Elbe riverbed in the section from the weir Pardubice, i.e., from the confluence of the Elbe with the Chrudimka to the confluence of the Elbe with the Loučna.

Agricultural Water Management Authority

- Flood protection of watercourse Porubka and left-bank tributary
Time of implementation: 7/04 – 12/06.
Total costs: CZK 21.256 million ,
invested by the year 2006:
CZK 21.251 million.

The construction deals with flood protection on the territory of the watercourse Porubka, in particular in the section Horní Lhota – Vřesina – Poruba, where the stream had frequently burst its banks, resulting in damage to the surrounding lands, the creation of a gully and the flooding of the lower part of the Porubka catchment area. The performance of technical and

revitalisation measures on the watercourse leads to the elimination of these negative phenomena and thus at the same time increases the ecological stability of the watercourse and adjacent areas, which significantly increases the protection of adjacent lands.

Within the context of programme 229 110 – „Rectifying Consequences of Flood on State Water Management Assets” in 2006 two sub-programmes were implemented. These are sub-programme 229 113 – „Rectifying Consequences of Flood of 2002” and sub-programme 229 114 – „Rectifying Consequences of Flood of 2006”.

Sub-programme 229 113 – „Rectifying Consequences of Flood of 2002”

Within the context of sub-programme 229 113, in 2006 a total of 24 investment events were implemented and completed, of which 21 AWMA events were comple-

ted, and 3 events of the Ohře River Board, s.e. were completed. The sub-programme was terminated in 2006.

In the following overview we give some of the more significant events in sub-programme 229 113:

Agricultural Water Management Authority

- Rectifying flood damage Býkovský Stream
Total costs: CZK 12.052 million,
invested by the year 2006:
CZK 12.052 million.
- Rectifying flood damage Ejpovice
Total costs: CZK 11.091 million,
invested by the year 2006:
CZK 11.091 million.
- Rectifying flood damage Merklínka
Total costs: CZK 11.363 million,
invested by the year 2006:
CZK 11.363 million.
- Rectifying flood damage Mlýnský Stream

Total costs: CZK 15.980 million,
invested by the year 2006:
CZK 15.980 million.

Ohře River Board, s.e.

- Rectifying flood damage, Petrovický Stream, r. km. 1.200 – 4.700
Total costs: CZK 25.044 million,
invested by the year 2006:
CZK 25.044 million.

Sub-programme 229 114 – „Rectifying consequences of flood of 2006“

Within the context of sub-programme 229 114, initiated in 2006, a total of 126 events were implemented, of which 66 events were completed in the same year. The greatest number of events, including project documentation, was ensured by the AWMA, this being 14 investment and 64 non-investment events and also by the Morava River Board, s.e., 2 investment and 32 non-investment events.

In the following overview we give some of the more significant events in sub-programme 229 114:

Agricultural Water Management Authority

- Úštěk – Loubní Stream
Time of implementation: 9/06 – 12/06.
Total costs: CZK 1.034 million,
invested by the year 2006: CZK 1.034 million.
- Canal Krhovice – Hevlín – flood damage 2006
Time of implementation: 11/06 – 12/07.
Total costs: CZK 0.744 million,
invested by the year 2006:
CZK 0.380 million.
- Watercourse Porubka and left-bank tributary
Time of implementation: 10/06 – 12/06
Total costs: CZK 0.688 million,
invested by the year 2006:
CZK 0.688 million.
- Reservoir Knířov
Time of implementation: 10/06 – 12/06.
Total costs: CZK 0.794 million,
invested by the year 2006:

CZK 0.794 million.

- Rectifying flood damage – Hluboká nad Vltavou
Time of implementation: 11/06 – 11/07.
Total costs: CZK 0.971 million,
invested by the year 2006:
CZK 0.194 million.

Vltava River Board, s.e.

- Lužnice, r. km 61.900 – 62.900, repair to riverbed, deposits, rip, weirs
Time of implementation: 11/06 – 11/07.
Total costs: CZK 2.049 million,
invested by the year 2006:
CZK 1.049 million.
- Vltava, r. km 10.000 – 10.110, lower lock Hořín – repair to reinforcement, deposit
Time of implementation: 11/06 – 5/07.
Total costs: CZK 1.957 million,
invested by the year 2006:
CZK 1.100 million.
- Skalce, r. km 29.960 – 31.383, repair to regulation, Březnice
Time of implementation: 10/06 – 11/06.
Total costs: CZK 1.012 million,
invested by the year 2006:
CZK 1.012 million.

Morava River Board, s.e.

- Bobrava, km 24.254 – 25.700, Tetčice, repair to course
Time of implementation: 10/06 – 5/07.
Total costs: CZK 2.958 million,
invested by the year 2006:
CZK 2.458 million.
- Dyje, km 127.500 – 130.800, Znojmo, repair to course
Time of implementation: 11/06 – 10/07.
Total costs: CZK 2.609 million,
invested by the year 2006: CZK 0.285 million.
- Cholinka, Horka – repair to right-bank dyke



Labe river, Sebzín

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Time of implementation: 9/06 – 11/06.
Total costs: CZK 4.457 million, invested by the year 2006: CZK 4.095 million.

- Litava, km 37.030 – 51.190, repair to gradient steps

Time of implementation: 10/06 – 7/07.
Total costs: CZK 1.993 million, invested by the year 2006: CZK 0.993 million.

- Polní Stream, Novosedly, dyke spill-way

Termín realizace: 9/06 – 5/07.
Time of implementation: 9/06 – 5/07.
Total costs: CZK 3.238 million, invested by the year 2006: CZK 3.187 million.

Forests of the Czech Republic, s.e.

- Flood damage 03/06 Knapovecký Stream – Hylváty

Time of implementation: 11/06 – 6/07.
Total costs: CZK 4.801 million, invested by the year 2006: CZK 3.139 million.

- Rectifying flood damage – Stream Kudíbal, cadastral territory of Dobřív

Time of implementation: 11/06 – 6/07.
Total costs: CZK 1.818 million, invested by the year 2006: CZK 0.646 million.

- Rectifying flood damage – Stream Kudíbal, cadastral territory of Dobřív

Time of implementation: 10/06 – 8/07.

Total costs: CZK 1.818 million, invested by the year 2006: CZK 0.646 million.

Programme 229 210 – „Renewal, dredging and reconstruction of fishponds and reservoirs“

In 2006, in the context of programme 229 210 a total of 54 events were financed. Of this number 9 events had already been initiated in 2005 and were carried forward to 2006. In 2006, in the context of programme 229 210 a total of 45 new events were initiated. Out of this number 44 events were initiated in sub-programme 229 212, and 29 of them were completed in 2006 and the remaining 15 events are carried forward to 2007. In sub-programme 229 218, the character of which focuses on rectifying flood damage from the year 2002, in 2006 1 event was financed and completed.

With regard to the character of many events consisting of investment and non-investment parts, it is not possible to divide up the above number of events precisely as events of an investment and non-investment character.

Sub-programme 229 013 Small watercourses administered by the AWMA

Within the context of the sub-programme 229 013 Small watercourses administered by the AWMA, in 2006 the AWMA partially constructed 27 investment constructions, of which 4 were completed in that year. In addition, the implementation of 10 constructions was prepared, the processing of 34 sets of project documentation was ensured for

repairs to minor watercourses, reservoirs and polders, and six sets of project documentation were prepared for the revitalisation of river systems, and land was purchased for 25 events with an area of 101,091 m². In total in this sub-programme state budget resources of CZK 80.5 million were expended in 200.

In the following overview we give some of the most important partially constructed events in the sub-programme 229 013:

- Alteration of watercourse Luha

Total costs: CZK 17.954 million, invested by the year 2006: CZK 13.677 million.

- Alteration of watercourse Kolonka

Total costs: CZK 8.424 million, invested by the year 2006: CZK 7.843 million.

- Střítežský Stream

Total costs: CZK 7.801 million, invested by the year 2006: CZK 7.491 million.

- Reconstruction of Hať, 2nd structure

Total costs: CZK 12.224 million, invested by the year 2006: CZK 11.810 million.

- Reconstruction of Anenský Stream

Total costs: CZK 10.781 million, invested by the year 2006: CZK 6.707 million.

- Leska

Total costs: CZK 12.757 million, invested by the year 2006: CZK 4.164 million.

- Ludina

Total costs: CZK 27.933 million, invested by the year 2006: CZK 2.819 million.

Maintenance of minor watercourses, water and dry reservoirs

Within the context of this support, i.e., for maintenance, repair, care for state assets on minor watercourses,

Table 8.2.1
Utilisation of grants according to type of measure supported in 2006

Sub-programme	Number	Number of measures	Grants thousand
Revitalisation of natural function of watercourses	215 112	34	61 342
Establishment and revitalisation of elements of system of ecological stability bound to the aquatic system	215 113	12	18 697
Elimination of transverse obstacles on watercourses and support for such technical solutions as do not contain them (addition and construction of fish ladders)	215 114	5	7 374
Revitalisation of retention ability of countryside	215 115	68	150 581
Construction and renewal of WWTP and sewerage systems, including establishment of artificial wetlands	215 117	54	211 737
Revitalisation of natural function of watercourses with revitalisation of retention ability of countryside	215 118	25	39 032
Total		198	488 763

Source: MoE, WMRI T.G.M.

water and dry reservoirs and associated objects, and for care for unadjusted small watercourses administered by the AWMA, in 2006 non-investment resources of the state budget were expended in the amount of approximately CZK 81.5 million. In total 997 non-investment events were implemented and completed, and maintenance of 716.7 km of small watercourses was performed.

Operation of minor watercourses, water and dry reservoirs and associated objects

In the context of this support, in 2006 non-investment resources of the state budget in the amount of almost CZK 20.5 million were expended. AWMA implemented and completed 273 operational measures.

Maintenance of main drainage facilities

Within the context of this support, i.e., for maintenance, repair and care for state assets on main drainage facilities and associated objects, in 2006 non-investment resources were expended from the state budget in the amount of CZK 19.4 million. The AWMA implemented and completed 343 non-investment measures and performed maintenance of 234.3 km of MDF.

Operation of main drainage facilities

Within the context of this support, in 2006 non-investment resources from the state budget were expended in the amount of more than CZK 9.6 mill. The AWMA implemented and completed 102 operational measures.

8.2 Financial support of the Ministry of the Environment

The programme for the revitalisation of river systems assumes the gradual fulfilment and implementation of measures



Svratka river, WW Vir

which lead to the maintenance and systematic increase in biodiversity, positive arrangement of water conditions and such arrangement of the functional use of the territory as ensures the protection of the natural and cultural values of the landscape. The basic aim of this programme is to create the conditions for the renewal of the natural environment, including resources used by man.

The water system is one of the most sensitive and also significant elements of the landscape. Human activity impacts on the natural water cycle, deteriorates the quality of surface water and groundwater and thus threatens the state of the natural environment. Since 2003, the programme for the revitalisation of river systems (referred to hereinafter as the „PRRS“) has included solutions to problems with the removal and treatment of waste water.

The rules of PRRS for the provision of financial resources for the year 2006 were designated by Directive of the MoE No 3/2006 from 10.3.2005.

In 2006, financial resources were provided for the implementation of revitalisation measures in the context of these sub-programmes:

- revitalisation of natural function of watercourses (sub-programme 215 112),
- establishment and revitalisation of elements of the system of ecological stability linked to the water system (sub-programme 215 113),
- removal of transverse obstacles on watercourses and support for such technical solutions as do not contain them (addition and construction of fish ladders) – (sub-programme 215 114),
- revitalisation of retention ability of landscape (sub-programme 215 115),

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- e) construction and renewal of WWTP and sewerage systems, including establishment of artificial wetlands (sub-programme 215 117),
- f) revitalisation of natural function of watercourses with revitalisation of retention ability of landscape (sub-programme 215 118).

The river system revitalisation programme is ensured by the department for the administration of programmes and assets in the section of nature and countryside protection of the MoE, where the Committee for Evaluation of Investment Intentions, Applications and Recommendations for Decisions has been established. The Department for Ecology of the Countryside and Forests guarantees the ordering of the processing of revitalisation studies and expert reports in order to ensure the agreement of revitalisation measures with the interests of nature and countryside protection, and in this sense the locally competent centres of the APNC and regional advisory boards methodologically guide the activity. At the regional level, events are evaluated by the locally competent centres of the APNC and advisory boards, which are organisationally managed by the department for the administration of programmes and assets.

Financial resources for the implementation of PRRS events are released from the budget chapter of the ministry and provided according to the rules of the PRRS in the form of grants in addition to the own resources of the applicant after discussion and recommendation by the APNC and regional advisory boards and after the issue of a Decision on Participation of the State Budget in the Financing of an Event. For sub-programme 215 117 the grants for events with submitted investment intention in 2004 and later which are submitted directly to the minister of the environment are released on the basis of discussion and recommendation of the Commission for Landscaping Programmes and after the issue of a Decision on Participation of the State Budget in the Financing of an Event. Owners of land or water management

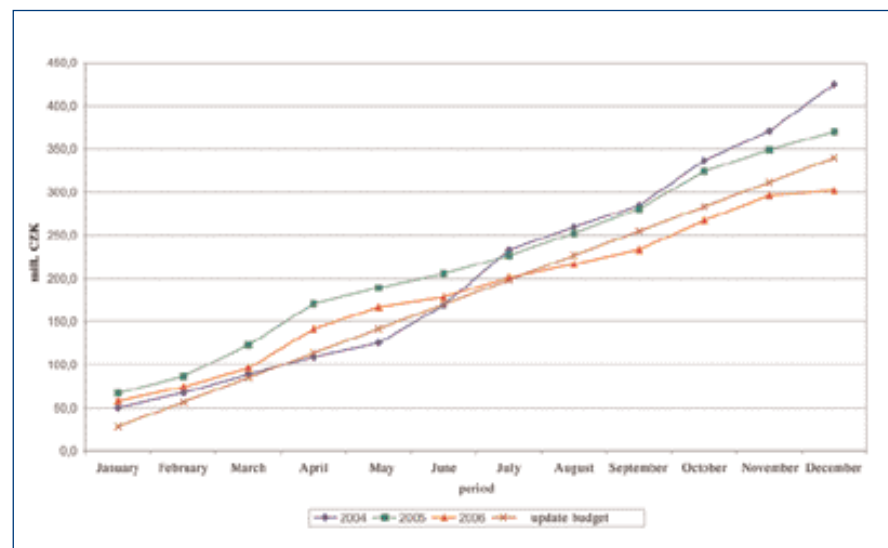
constructions, administrators of watercourses, the APNC or the administration of a national park or non-governmental non-profit-making organisation can be an applicant for financial resources for revitalisation measures (sub-programmes No 215 112 – 215 115 and 215 118). Only organisations established by a ministry and non-governmental non-profit making organisations may receive a contribution towards the processing of project documentation. Municipalities, federations of municipalities and joint-stock companies of water supply systems and

sewerage systems with limited transferability of shares (or with established right of lien) may be an applicant for support from the sub-programme No 215 117.

8.3 State Environmental Fund

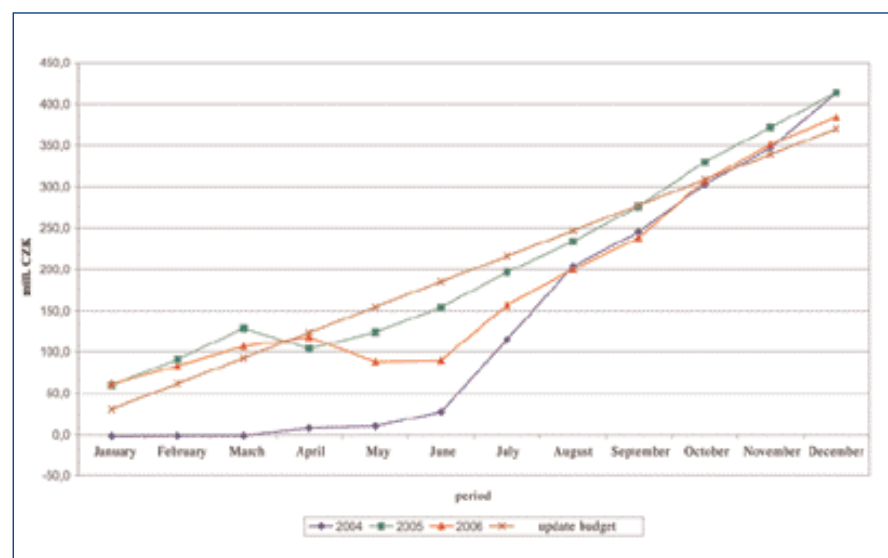
The State environmental fund of the Czech Republic is a specifically focussed institution which is a significant financial source for the support of implementation of

Graph 8.3.1
Development of incomes from charges in the element of waste water



Source: SEF

Graph 8.3.2
Development of incomes from charges in the element of groundwater



Source: SEF



Černovír, Olomouc

measures for the protection and improvement of the state of the environment in its individual elements. It is one of the basic economic tools for discharging the liabilities arising from international agreements on environmental protection, membership of the Czech Republic in the EU, and for the implementation of state environmental policy.

The State Environmental Fund (referred to hereinafter as the „SEF“) was established and its activity is legislatively regulated by Act No 388/1991 Coll., to which apply the implementing regulations – Statute of the Fund, Rules of Procedure of Board of Fund, Directive of MoE concerning provision of financial resources from the Fund and Annex of the Directive regulation the conditions for the provision of support of the relevant period. The administrator of the Fund is the MoE.

The income of the Fund consists primarily of payments for pollution or damage to the individual elements of the environment, from repayments of loans and their interest and yields from

deposited disposable resources on term deposits. Under the law, the minister of the environment decides on the use of financial resources from the Fund on the basis of the recommendation of the advisory body – the Board of the Fund. These incomes do not constitute a part of the state budget.

In compliance with the liabilities arising from international treaties and the State Environmental Policy, support from the Fund is directed primarily to the area of protection of water and air, waste handling and the area of nature protection and landscape care. Decisions of the ministry concerning the provision of

Table 8.3.1
Implemented financial expenses of Fund for the element of water in 2006 in thous. CZK

	Grant	Proportion (%)	loan	Proportion (%)	Expenses total	Proportion (%)
water total	1 233 800	61,9	215 500	80,2	1 449 300	64,0
Of this NP	876 200	44,0	146 500	54,5	1 022 700	45,2
Of this ISPA (CF)	176 200	8,8	23 600	8,8	199 800	8,8
Of this OIP	181 400	9,1	45 400	16,9	226 800	10,0

Source: SEF

Table 8.3.2
Support of Fund in 2006 in thous. CZK

Subject of support	Grants CF + OIP	Proportion (%)	Loan CF + OIP	Proportion (%)	Podpora total	Proportion (%)
Business subjects:						
- legal persons	58 027	16,2	9 281	13,4	67 308	15,8
- otherwise not classified	134	0	0	–	134	0
Non-profit-making and similar organisations	20 335	5,7	5 304	7,7	25 639	6,0
Municipalities	172 563	48,3	40 419	58,6	212 982	49,9
Public budget	106 504	29,8	14 031	20,3	120 535	28,3
Total	357 563	100,0	69 035	100,0	426 598	100,0

Source: MoE

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support from the Fund are issued to support the financing of the individual ecological projects. The Fund provides direct and indirect financial support in the sense of section 3 and section 4 of Act No 388/1991 Coll., concerning the State Environmental Fund, in the form of grants, loans and contributions to part payment of interest.

The Fund represents a significant central source which participates in the application of state ecological policy and the approximation strategy of the MoE. The Fund was established by the implementation body for the Cohesion Fund (referred to hereinafter as „CF“) and brokering subject for the Operational Programme of Infrastructure – this is the structural European Regional Development Fund (referred to hereinafter as „ERDF“) and the CF. Within the context of the SEF, the payment unit for the specified programmes was established.

Recently the SEF has started fulfilling the priority of the Government of the Czech Republic and the MF, which is the co-financing of investments from European funds.

From the composition of incomes and expenses according to the elements of the environment, it is evident that out of the total revenues of the fund implemented as of 31.12.2006 in the amount of CZK 2 555.5 million, water protection represented CZK 1 318.1 million, which represents a proportion of the water element in the amount of 51.6 %. The concrete development of incomes from charges for waste water and groundwater is given by graphs 8.3.1 and 8.3.2.

The overall financial expenses of the Fund as of 31.12.2006 were CZK 2 262.2 million, and the element of water represented CZK 1 449.3 million, which is 64.0 %. The overall composition of financial expenses of the Fund in the element water with separation into grants and loans is documented by Table 7.3.1. In this table the contribution to payment of interest from a commercial loan, which in the water protection element constitutes CZK 1.6 million, is also included.

In the area of water protection in this period the Ministry of the Environment issued 22 decisions on the provision of support for the construction of waste

Table 8.4.1

Utilisation of public resources (EU and Czech Republic) in 2006 in the context of the operational programme „Development of the Countryside and Multifunctional Agriculture“ in sub-measures 2.1.2 and 2.1.3 in thous. CZK

Sub-measure	Number of approved requests	Approved requests – total amount	Number of projects paid for	Amount for projects paid for
2.1.2	50	107 520	30	87 810
2.1.3	58	301 430		
Total	108	408 950		

Source: MoA

Table 8.4.2

Overview of projects from cohesion fund not yet approved by the European Commission (in thous. EURO)

Name of project	Cohesion Fund	Total Costs
Supply of inhabitants with drinking water from Virský area water supply system	8 148	15 652
Resolution of selected problems of WM infrastructure in catchment area of Upper Vltava	19 984	41 533
Improvement in water management conditions in Šluknovský Salient	21 162	38 612
Mělník - sewers and waste water treatment plant, improvement of water quality in Elbe	12 688	20 248
Addition to sewer systems in agglomerations Hradec Králové and Nový Bydžov and measures for waste water treatment plant Hradec Králové	14 094	27 867
Clean Berounka - stage 1	11 812	19 005
Reconstruction and completion of sewers in Brno, Modřice and Kuřim	30 976	57 816
Completion of construction of flat sewers Ostrava-project I	15 153	27 439
Improving water quality in rivers Jihlava and Svratka above the reservoir Nové Mlýny	13 784	22 911
Sewer systems and waste water treatment plant Kladensko	22 045	30 244
Overall reconstruction of central waste water treatment plant Prague on Císařský Island	98 045	358 368
Upper Elbe	12 225	24 355
Clean Ploučnice	12 606	25 510

Source: MoE

water treatment plants and sewer systems in the context of National programmes (NP). Out of this number, it issued a total of 3 decisions for events included in programme 1.1, in programme 1.2 a total of 14 decisions, and in programme 1.5 a total of 5 decisions. The sum of overall costs for the implementation of the individual events (expressed as the base for the calculation of support) was CZK 659.7 million, and the overall provided support for SEF will be CZK 486.4 million (of this, grant CZK 430.2 million, and loan with 1.5 % interest CZK 56.2 million). The provision of financial resources will give the possibility of liquidating pollution in the amount of 355.92 t CCO and 175.63 t of solid substances per year.

In the area of water protection, in the context of the Operational Infrastructure Programme (OIP), in this period the Ministry of the Environment issued 15 Decisions on the provision of support for the construction of waste water treatment plants and sewer systems in programme 3.2.A. The sum of the allowable costs for the implementation of the individual events (expressed as the base for the calculation of

support) was CZK 692.1 million, and support from the ERDF will be CZK 449.9 million and from SEF CZK 83.1 million (of this a grant of CZK 69.2 million, and loan with 1.5 % interest CZK 13.9 million). The provision of financial resources will give rise to an opportunity to liquidate pollution in the amount of 839.08 t CCO and 421.14 t of solid substances per year.

The SEF will participate not only in the preparation and implementation of the ISPA and CF projects, but also in the financing of pre-investment costs and in the co-financing of the actual implementation of these projects. When designating the level of this support, the SEF proceeds in compliance with the relevant directives of the MoE concerning the provision of financial resources from the SEF for the co-financing of projects of the programme ISPA or CF.

The following are subjects of support:

- preparation for requests for support from programme ISPA/CF,
- processing of documentation for tenders and performing tenders for projects implemented in the context

- of programme ISPA and CF,
- investment projects implemented in the context of programme ISPA/CF.

Table 8.3.2 gives an overview of the provided support of the SEF in 2006 for the element water in a breakdown according to the individual target subjects of support.

8.4 Financial support from foreign cooperation and the EU

In 2006 many investments of a water management character were implemented from foreign sources via the European funds. Support was always made conditional on concurrent co-financing (from national sources), both from the own sources of investors and the possibilities of utilising other support from the state budget, but foreign financial sources were decisive.

In 2006 work continued on projects funded from the resources of the EU, originally from the programme ISPA, which was replaced by the CF after the entry of the Czech Republic to the EU. In 2006, a total of CZK 155.72 million was provided for the expansion of the sewerage system in Ostrava, financed from foreign sources via the SEF. In addition, in 2006 the financing of this event was supported by almost CZK 11 million from the state budget financed through the Centre for Regional Development Prague. In a similar manner, an extensive event in the context of a sewer system in Brno was also financed, where last year almost CZK 87.83 million was drawn from foreign sources, which was augmented by an amount of CZK 15 million from national sources (state budget).

In recent years, the fund PHARE – CBC (referred to hereinafter as „CBC“) contributed significantly to investment events, where several projects were financed in the framework of cross-border cooperation. The work and financing of the sewerage system in Litoměřice in the amount of EURO 104 966 (CZK 3.492 million) was

gradually completed from the CBC programme 2001. Financing from foreign sources connected with the reconstruction of the waste water treatment plant in Aš (including the completion of the sewerage system) and events associated with the improvement of Euroregions (treating communal waste water in the locality of Praděd) and with the building of a sewer system in Horní Benešov was completed in 2006.

Within the framework of CBC – programme 2002, a grant scheme programme for the environment and regional development was financed in a total amount for events of a water management character of EURO 136.22 thousand, which represents a contribution of almost CZK 4127.7. This group included events ranging from the dredging of fishponds in Kladenská Rovná (EURO 23.96 thous./CZK 726.07 thous.), the reconstruction of the waste water treatment plant in Železná Rudá (EURO 43.82 thous./CZK 1 327.93 thous.), drainage of municipal residential quarters in Nýrsko (EURO 20.27 thous./CZK 614.16 thous.), 2nd stage of the sewerage system in Hazlov (EURO 33.51 thous./CZK 1 015.28 thous.), expansion of the sewerage collector for the waste water treatment plant Strážný (EURO 14.66 thous./CZK 444.26 thous.).

Cross-border cooperation with Poland and Germany was conducted in the framework of CBC – programme 2003. In the case of cooperation on borders with Poland, in 2006 it involved continuation in the construction of a waste water treatment plant and sewerage system in Mosty u Jablunkova with annual expenses of EURO 413.28 thous. (CZK 13 115.38 thous.). Cooperation with Germany was implemented in the context of the Grant Scheme for the Environment and regional development, specifically the implementation of the second stage of sewers in the municipality of Vysoká Pec. In 2006 this investment represented EURO 37.61 thous. (CZK 1 193.68 thous.).

In the crown conversion, the implemented events used the conversion coefficients valid at the time of the contracting of the events (Source: Centre for Regional Development Prague).

In the context of the Operational Programme „Development of the Countryside and Multifunctional Agriculture“, in sub-measure 2.1.2 „Renewal of Potential and Preservation of Agricultural Landscape in 2006“ a total of 50 requests were approved in an amount of CZK 107.52 million of support from public resources (EU and Czech Republic). Within the context of this sub-measure projects were supported for the renewal of the agricultural production potential and flood prevention.

Under sub-measure 2.1.3 – „Management and Ensuring of Functionality of Agricultural Water Sources“ – in 2006, 58 requests were approved in an amount of CZK 301.43 million of support from public resources (EU and Czech Republic). Within the context of this sub-measure, projects were supported relating to the reconstruction of fishponds and agricultural reservoirs, the reconstruction of safety spillways and outlet facilities, including the appurtenances of these objects, and also projects focussing on the acquisition and renewal of constructions for the water management reclamation of land.

Within the context of both the sub-measures support from public resources (EU and Czech Republic) is provided in the amount of 100 % of acceptable expenses. During 2006, in the context of the aforementioned sub-measures 30 projects were completed and paid for relating to water management in an overall amount of almost CZK 87.81 million of support from public resources (EU and Czech Republic).

Within the context of the operational programme – „Operational Environmental Programme“ in the years 2007 – 2013 projects will be financed which ensure the treatment of municipal waste water in connection with the fulfilment of implementation of Council Directive No 91/271/EEC. In Table 8.4.2 projects are given relating to this area which were forwarded to the European Commission and which have not yet been approved. The approval of the concrete projects and thus the level of the financial resources depends on the resolution of contractual relations in the area of the operation of water supply and sewage systems.



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9.1 Amendment to act concerning water supply and sewer systems for public need and adopted changes to Water Act

Act No 274/2001 Coll., concerning water supply and sewer systems for public need and concerning the amendment of certain acts was amended by Act No 76/2006 Coll.

This extensive amendment, which became valid on the date of publication in the Collection of Statutes, i.e., 15.3.2006, contains the following changes. New definitions of water

supply and sewer systems which the act applies to, definition of operation, lifespan and new conditions for gaining permission for operation of water supply and sewer systems, separation of connected lands, connection of other water supply or sewer systems, connection to water supply and sewer systems, Plan for financing renewal, new duties of owners and operators, measuring and settlement, new competence of bodies of state administration and local government, administrative offences in a new highly expanded wording, transitional and concluding provisions.

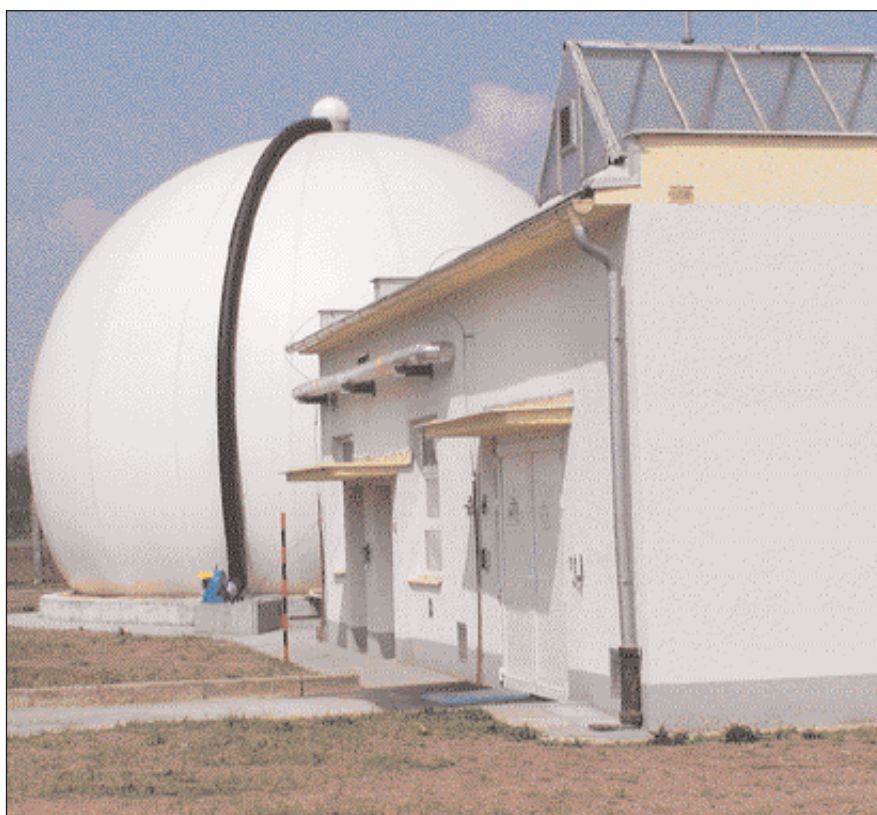
In 2006 there were the following changes to Act No 254/2001 Coll., concerning water and concerning

the amendment of certain acts (Water Act), as subsequently amended.

The adoption of the new Building Act No 183/2006 Coll., concerning urban planning and the building code (Building Act) brought with it significant changes, not only of Act No 254/2001 Coll., concerning water and concerning the amendment of certain acts (Water Act), as subsequently amended, in 2006. The changes of the Water Act in connection with the adoption of the new Building Act were performed by Act No 186/2006 Coll., concerning the amendment of certain acts associated with the adoption of the Building Act and Compulsory Purchase Act, part sixteen. This primarily involves the reflection of new alterations of the institutes of urban planning and thus certain associated changes and a clarification of the competencies of water authorities.

Act No 222/2006 Coll., which amends Act No 76/2002 Coll., concerning integrated prevention and limitation of pollution, concerning the integrated register of pollution and concerning the amendment of certain acts (act concerning integrated prevention), as subsequently amended, and certain other acts added to section 126 paragraph 5 of the Water Act the issue of an integrated permit also for change proceedings pursuant to section 12 paragraph 1 of the Water Act and removed from the competence of the Act concerning Integrated Prevention and Limitation of Pollution expression pursuant to section 18 paragraph 1 of the Water Act.

Act No 342/2006 Coll., which amends certain acts associated with



WWTP Hodonín

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the area of records of inhabitants and certain other acts, introduced, by the addition of paragraph 3 to 5 to the provisions of section 104, the possibility of the central water authorities MoA and MoE gaining data about inhabitants from the information system of inhabitants records for the purposes of exercising competence in the section of water management.

Act No 444/2005 Coll., which amends Act No 531/1990 Coll., concerning local financial bodies, as subsequently amended and certain other acts transferred the collection and recovery of charges for the discharge of waste water to surface water from inland revenue offices to customs offices. The balancing of the charge with paid advances for the consumption of groundwater by the customs office becomes effective on the date 1.1.2007.

In order to optimise the exercise of public administration by the bodies of local government units, A Summarised Analysis of the Competencies Exercised by the Bodies of Local Government Units was processed and adopted by the resolution of the government from the date 22.11.2006 No 1325. For the Water Act it entails the need to amend certain competence ambiguities of water authorities during the next amendment of the Water Act.

Individual amendments to the Water Act can also be expected in the context of implementation of EC law, for example:

- Directive of the European Parliament and Council 2006/7/EC concerning the management of bathing water quality and repealing Directive 76/160/EEC,
- Directive of the European Parliament and Council 2004/35/EC on environmental liability with regard to the prevention and remedying of environmental damage,
- Directive of the European Parliament and Council 2006/21/EC on the management of waste from extractive industries and amending Directive 2004/35/EC.



Černá Nisa river, WW Bedřichov

9.2 Implementing regulations for Water Act and other associated regulations

During 2006, several implementing regulations to the Water Act were published in the Collection of Statutes of the Czech Republic.

They were the following decrees and orders:

- Decree No 78/2006 Coll., which amends Decree No 221/2004 Coll., which designates lists of dangerous substances and dangerous preparations, the putting of which on the market is prohibited or the putting of which on the market, into circulation or use is limited, as amended by Decree No 109/2005 Coll. (limiting the content of phosphorous in washing powders, the decree applies to Act No 356/2003 Coll., concerning chemical substances and chemical preparations and concerning the amendment of certain acts), prepared in the competence of the MoE,
- Decree No 39/2006 Coll., which amends Decree No 241/2002 Coll., concerning the designation of reservoirs and watercourses on which the navigation of craft with combustion engines is forbidden, and concerning the scope and conditions of use of surface water for navigation, prepared in the competence of the MD,
- Decree No 168/2006 Coll., which amends Decree No 159/2003 Coll., which designates surface water used for the bathing of persons, prepared in the competence of the MoH,
- Decree No 292/2006 Coll., which amends Decree No 135/2004 Coll., which designates the hygiene requirements for bathing places and saunas and the hygiene limits of sand in sandpits of outdoor play areas, prepared in the competence of the MoH,
- Order of the Government No 169/2006 Coll. from the date 12.4.2006, which amends Order of the Government No 71/2003 Coll., concerning the designation of surface water suitable for the life and reproduction of native species of fish and other aquatic organisms and concerning the ascertaining and evaluation of the state of this water.

In 2006, Decree No 450/2005 Coll., concerning the particulars of handling harmful substances and particulars of accident plan, method and scope of announcing accidents, their remedying and the rectifying of their harmful consequences, also became valid.

In 2006 work was performed on the preparation of a decree concerning bodies of water and programmes for monitoring and ascertaining the state of water and bodies of water, this being for the fulfilment of the statutory authorisation of section 21 paragraph 3, in the competence of the MoE and the amendment to the Order of the Government No 61/2003 Coll., concerning indicators and values of permissible pollution of surface water and waste water, the particulars of the permit for the discharge of waste water to surface water and to sewers and concerning sensitive areas also in the competence of the MoE.

At the start of 2007, in the Collection of Statutes of the Czech Republic the decree was published which was prepared by the MoA No 7/2007 Coll., which amends Decree No 7/2003 Coll., concerning water law records, as amended by Decree No 619/2004 Coll., and Decree No 23/2007 Coll., concerning the details of the delineation of waterworks recorded in the cadastral record of real estate of the Czech Republic.

For the activity of water authorities, administrators of watercourses and water users, in 2006 the following methodological instructions were issued:

- methodological instruction of the MoA for publishing information about planning in the area of water on the Public Administration Portal (ref. No 2805/2006-16000),
- joint methodological instruction of the MoA and MoE on the joint procedure of nature protection bodies and administrators of watercourses during activities associated with the administration of watercourses outside specially protected territories, significant European localities and bird areas (ref. No 8662/2006-16000),

- joint methodological instruction of the MoA and MoE for ensuring fulfilment of the programme for the reduction of pollution of surface water suitable for the life and reproduction of native species of fish and other aquatic organisms (ref. No 32426/2006-16000),
- methodological instruction of the water protection department of the MoE and department of water management policy of the MoA for monitoring water pursuant to section 21 paragraph 4 Act No 254/2001 Coll., concerning water and concerning the amendment of certain acts (Water Act), (ref. No 44605/2006-16000).

On the basis of four discussions of the interpretation committee for the Water Act and associated legal regulations in the competence of the MoA, in 2006 the MoA published on its internet pages 6 interpretations concerning the matter of the Water Act.

9.3 Implementing and internal regulations for the act concerning water supply and sewer systems for public need

Decree No 428/2001 Coll., which implements Act No 274/2001 Coll., concerning water supply and sewer systems for public need, was amended by Decree No 515/2006 Coll.

This more extensive amendment, which had been in preparation since mid 2005 and which becomes effective on the date 1.1.2007, contains an augmentation of the definitions for selected data, asset and operational records, plan for financing renewal of water supply and sewer systems, content of request for permission for operation of water supply and sewer systems, the more detailed definition of terms of qualification conditions (education, including associated fields and experience) for the operation of water supply and sewer systems, change in guiding figures of annual water consumption,

content and procedure during overall billing of all items of the calculation of price pursuant to pricing regulations for water supply and sewerage charges.

Measures of a general nature – rules for classification of items during calculation of price for water supply and price for sewerage charge, including structure of individual items.

Measures of a general nature were issued by the MoA as the materially competent administrative body in the sense of the provisions of section 29 paragraph 3 letter b) Act No 274/2001 Coll., concerning water supply and sewer systems for public need and concerning the amendment of certain acts (Water Supply and Sewer Systems Act), as subsequently amended, and in compliance with the provision of section 171 Act No 500/2004 Coll., the Administrative Code, as subsequently amended. The owner or operator (section 2 paragraph 4 Water Supply and Sewer Systems Act) of a water supply system (section 2 paragraph 1 Water Supply and Sewer Systems Act) or sewer system (section 2 paragraph 2 Water Supply and Sewer Systems Act) proceeds, when calculating the price for water supply and sewerage charges, pursuant to pricing regulations in a manner and breakdown of items pursuant to Annex No 1 of this measure of a general nature, which is an integral part thereof. The structure (content) of the individual items is given in Annex No 2 of this measure of a general nature, which is an integral part thereof. If during the calculation of the price for water supply and sewerage charges a cost is identified which cannot be allocated (in compliance with Annex No 2) such a cost must be recorded in one of the items pursuant to Annex No 1 in this item. The measure of a general nature serves for a comparison of costs and prices in compliance with the provision of the Water Supply and Sewer Systems Act. The specified measure of a general nature can be used for the purposes of calculating the water price, but it cannot be considered a price regulation.

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These rules are used for the first time for the calculation of prices for water supply and sewerage charges for 2007. Upon the issue of this measure of a general nature, the Methodological Instruction of the MoA ref. No 24142/2003-6000 from the date 1.7.2003 loses effect. The specified measure of a general nature became effective on 19.9.2006.

In 2006, five meetings were held of the interpretation committee for Act No 274/2001 Coll., concerning water supply and sewer systems for public need and associated legal regulations in the competence of the MoA. Ten interpretations were approved at these meetings.

9.4 Inspection of exercise of state administration in the field of water management

Control and supervision activity performed by the Ministry of Agriculture was implemented in 2006 in compliance with ruling of the government No 554 + P from the date 4.6.2003 and pursuant to the „Plan of Inspections of Regional Authorities for the Year 2006 and 2007“.

Inspections were conceived so as to record the ensuring of effective methodological assistance not only to water authorities but also at the regional level and at the municipal level, primarily for municipalities with expanded competence. For this reason, in the monitored period a series of inspections was commenced on randomly selected municipal authorities of municipalities with expanded competence, when in 2004 four municipal authorities were inspected, and nine were inspected in 2005, and in 2006 16 municipal authorities of municipalities with expanded competence were inspected. The aim of this programme of inspections of municipal authorities, which if possible is implemented in active cooperation with regional authorities, is the guaranteeing of the fault-free exercise of state administration by lower water authorities and the deepening of mutually beneficial communication between the central water authority and those administrative bodies of lower instance and also the greater extent of involvement of regional authorities in the inspection activities of municipalities in their area of interest. The MoA will continue in this activity in the years to come, because it significantly supports the mutual transfer of findings and information from the area of water management and expands the knowledge about the current problems of the field.

From the aspect of the material focus of inspections, it can be stated that the inspections focussed primarily on the proper application of the individual provisions of the Water Act, the Water Supply and Sewer Systems Act and associated implementing legal regulations in the competence of the MoA. Because the work of the water authorities is significantly associated with the exercise of state administration performed in the form of managing administrative proceedings, it was also essential to ensure adherence to the legal norms of the Administrative Code. In connection with waterworks and the provision of section 115 paragraph 1 of the Water Act, the procedure according to the provisions of the Building Act and its implementing legal regulations was also inspected.

Table 9.4.1
Inspection of exercise of state administration carried out by MoA in 2006

Region	Date of inspection
Ústí nad Labem	23. 2.
Olomouc	23. 3.
Hradec Králové	19. 5.
Píseň	26. 9.
South Moravia	31. 10.
Central Bohemia	11. 12.

Source: MoA

From the aspect of the individual inspected areas, the emphasis was placed primarily on adherence to administrative deadlines, the actual conducting of administrative proceedings, including the procuring of evidential source data, and the construction of administrative decisions and also the performance of supervision, both technical-safety supervision of waterworks and water-authority supervision of adherence to legal

Table 9.4.2
Inspection of exercise of state administration performed by the MoA in 2006

Municipality	Date of inspection
Turnov	26.7.
Železný Brod	26.7.
Semily	27.7.
Jilemnice	27.7.
Nymburk	31.7.
Lovosice	2.8.
Litoměřice	2.8.
Kladno	7.8.
Beroun	7.8.
Hranice	9.8.
Nový Jičín	9.8.
Rožnov pod Radhoštěm	10.8.
Valašské Meziříčí	10.8.
Žatec	16.8.
Louny	16.8.
Poděbrady	23.8.

Source: MoA

regulations and administrative decisions by natural and legal persons.

If it is possible to summarise the conclusions of the inspections performed at regional authorities, the exercise of state administration in the section of water management ensured by these administrative bodies can be evaluated as being essentially good and at a corresponding level. No remedial measures had to be imposed in any of the inspected cases because the extent of the seriousness of any ascertained shortcomings did not warrant it. In most of the named (minor) errors not directly causing the unlawfulness of the issued decisions, there was always a material discussion which ensured the future elimination of any repeat of such an approach.

Despite minor shortcomings or individual mistakes, it is possible to evaluate the management of water proceedings, associated activities and the keeping of introduced records as being very good. It is particularly necessary to emphasise every attempt at methodological assistance to subordinate authorities in connection with the effectiveness of the relatively new Administrative Code and new Building Act, where in practice there occurred various errors of interpretation and application. In this matter there was an attempt of the MoA to participate in the development of interpretations not only of the aforementioned laws and practical application of the legislation. The regular meetings of the water authorities of various instances should help this.



Chrudimka river, WW Hamry

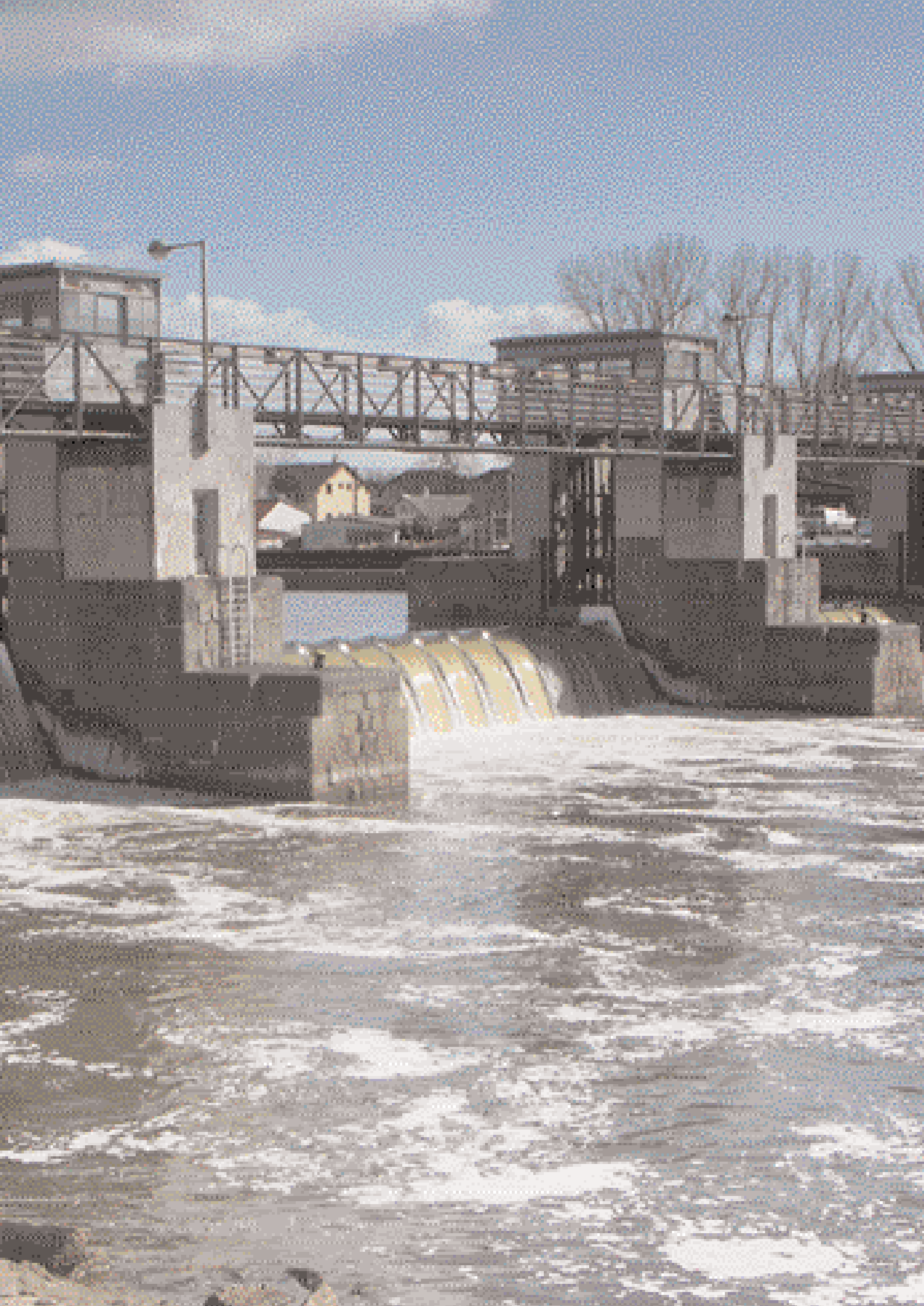
Act No 129/2000 Coll., concerning regions, as subsequently amended, in the provisions of section 88 lays out the rights and duties of regions (and according to the provisions of section 31 paragraph 1 of Act No 131/2000 Coll., the capital Prague is also governed by them) in transferred competence to inspect the exercise of transferred competence by municipalities.

The subject of the inspection activities of the regional authorities and the City Council of the capital Prague was the exercise of state administration in the section of water management performed at the level of municipal authorities of municipalities with expanded competence and authorised municipal authorities. From the inspection findings it is evident that the municipaliti-

es exercise the transferred competence in the field of water management as far as they are able, but they are limited in terms of personnel and equipment. As in previous years, one can state that although the operation of state administration is not disturbed, for a faster progress of administrative proceedings and for higher quality of the issued decisions it would be necessary to increase the number of employees of the municipal authorities focussing on the legal system and on the matter of water management. This increase in personnel would also allow better supervisory activity of municipalities and thus a better overview of the adherence to conditions of issued decisions and legal regulations. Here it should be noted that there is a need for broader

cooperation between the management of the local government units and the relevant central bodies of state administration in the area of the exercise of transferred competence.

Despite that mentioned above, one must evaluate the exercise of state administration in the area of water management in the Czech Republic by all grades of water authorities, including the actively cooperating military area authorities and other central water authorities, as being of very high quality, which now traditionally corresponds to the high standard of the work performed.



PLANNING IN THE FIELD OF WATER MANAGEMENT

10.1 Planning in the field of water

As part of the process for planning in the area of water as a systematic conceptual activity guaranteed by the state which was introduced to the Czech legal system according to the requirements for the transposition of the „*acquis communautaire*” of the European Communities, in particular Directive 2000/60/EC of the European Parliament and of the Council from the date 20.10.2000 establishing a framework for the Community action in the field of water policy (referred to hereinafter as „*Directive 2000/60/EC*”), in 2006 the Plan of Major Catchment Areas of the

Czech Republic was processed as a document of state policy in the field of water, pursuant to Act No 254/2001 Coll., concerning water and concerning the amendment of certain acts, as subsequently amended.

This first Plan of Major Catchment Areas of the Czech Republic represents a long-term concept in the area of water with a focus for the six-year period from 2007 – 2012. It integrates the intentions and aims of the departmental policies of central water authorities when sharing competencies in the sense of the provisions of section 108 of the Water Act; it links in particular to the Concept of Water Management Policy of the MoA for the period after the accession to the EU for the

years 2004 – 2010 and the State Environmental Policy 2004 – 2010. Along with other associated state policies and resort concepts, it creates a framework for the formation of the policy of care for the territory of the Czech Republic complementary with the policy of the EU. The Plan of Major Catchment Areas of the Czech Republic will be renewed every six years.

Pursuant to section 24 of the Water Act, the MoA prepare the Plan in cooperation with the MoE and other interested central administrative bodies (MoH, MoT, MoD, as central water authorities), the Ministry for Local Development, the Ministry of the Interior, regional authorities and the Prague City Council.

Following the approval of the Plan, its binding part will be declared by order of the government and become a binding basis for proposals of measures for ensuring framework targets from the part of central administrative authorities, including the ensuring of financial sources for implementing the proposed measures, for acquiring concept documents with a relation to water and water management and for processing the associated plans for the catchment areas.

The Plan defines and mutually harmonises the public interests whilst taking into account social and economic contexts in the areas of:

- protection of water as a component of the environment,
- protection from flood and other dangerous effects of water,
- permanently sustainable use of water sources and management of water for ensuring the requirements



Rožnovská Bečva river, WW Horní Bečva

for water management services, in particular for the purposes of supplying drinking water.

The content and method for processing the Plan is designated by implementing decree No 142/2005 Coll., concerning planning in the field of water. For the coordination of co-submitters, the Commission for Planning in the Field of Water established by the MoA was used. Preparatory work began in 2005 and the first draft of the Plan was displayed from 19.5.2006 to 3.7.2006 on the Public Administration Portal for consultation with the public. After evaluation and incorporation of suggestions of the public, the draft Plan was handed over for evaluation of the influences of the concept on the environment and public health pursuant to Act No 100/2001 Coll., concerning the evaluation of environmental impact, as subsequently amended (so-called SEA). Public discussion in the context of the evaluation of the SEA was held on 9.10.2006.

Most of the comments concerned the matter territorial protection of prospective localities for the accumulation of surface water, which was misunderstood by the public, including the media, and taken as a plan for the construction of dams in the near future. Despite the explanation, including the joint standpoint of the MoA and MoE given at a public meeting for the evaluation of the submitted comments of 3.11.2006, it was not possible to explain to the public the meaning of the territorial defence of suitable areas for the accumulation of surface water as tools of provisional circumspection for the eventuality of the adverse development of climate change and ensuring the future need of water. With regard to the media coverage of the problem, there was a constant negative reaction in the form of open letters and petitions demanding the deleting of this matter from the draft Plan.

The consensual standpoint of the SEA was issued by the MoE on 16.11.2006 and one part of it is the requirement that in the first planning period of 2007 – 2012 no financial

resources for preparatory or implementation projects related to the selected localities should be released.

The further procedure was predicated in article 4 of the Agreement on Joint Procedure During the Resolution of Current Questions between the MoA and MoE from 15.12.2006. At the ministerial level the MoA and MoE decided that the List of Localities Suitable for the Accumulation of Surface Water would not be a part of the material submitted to the government for approval (the material will be finished by a joint working group and submitted next year).

In addition to the preparation of the Plan of Main Catchment Areas of the Czech Republic, preparatory work continued on the plans of the catchment areas, including activities associated with the preparation, introduction and processing of programmes for monitoring and submitting reports to the European Commission pursuant to Framework Directive 2000/60/EC. For the procedure of acquirers of the plans for catchment areas and other subjects participating in the process of planning in the field of water, in 2006 the MoA and MoE issued a joint methodological instruction. Three discussions of the Commission for Planning in the Field of Water were called for the further coordination and transfer of information.

From 1.1.2006, for a period of six months the Time Plans and programmes of work for the individual catchment areas were accessible on the public administration portal for comments of the public, and they were subject to comments in particular from the secretariat of the International Commission for the Protection of the Elbe (referred to hereinafter as „ICPE“). It was agreed that the request of the ICPE would be complied with, and the deadlines of final approval of the plans of the catchment areas would be unified in all catchment areas of the Czech Republic as 1.11.2009. Approval of this stage of preparatory work was performed at the level of regional authorities.

Within the context of methodological support for the process of planning in the area of water, the MoA ensured

the methodology for the evaluation of measures which area lined to the so-called Catalogue of Measures prepared in 2005.

On the basis of the methodological instruction, programmes of monitoring were prepared which will be used for ascertaining the state of surface water and groundwater. The monitoring programmes were prepared in such a way as they corresponded to the requirements of Framework Directive 2000/60/EC and also followed on from the preceding systems of monitoring water quality and so that they should use to the maximum extent the experience gained over long-term monitoring of the amount and quality of water in the Czech Republic. The administrators of watercourses and the CHMI, WMRI T.G.M. and AWMA cooperated on the processing of programmes. The fundamentals and methodological procedures for performing the individual programmes of monitoring are defined by the Framework Monitoring Programme. The programmes of situation monitoring and programmes for monitoring the quantitative state of surface water and groundwater will serve for an overall overview of the state of water in our country. Programmes of operational monitoring focus on concrete problems and high-risk bodies of water in the individual catchment areas. One part of the programmes of operational monitoring is the monitoring of protected areas linked to the aquatic environment designated in directive 2000/60/EC. In the event of extraordinary phenomena for which the causes are not known, or the incidence of accident pollution, programmes of survey monitoring will be applied operatively. For the purposes of designating or deriving reference conditions, a programme for monitoring reference conditions was introduced.

In connection with the monitoring programmes, in 2006 methodologies were completed for monitoring the individual elements of quality, of which in particular the monitoring of certain biological components of quality has been introduced on a nationwide level for the first time. For the correct introduction of new components of monitoring

PLANNING IN THE FIELD OF WATER MANAGEMENT

ring, in 2006 a training session was held for expert laboratory workers who will be in charge of processing samples.

In 2006 there was trial operation of monitoring. In December 2006 the MoE and MoA issued a joint methodological instruction for procedure during monitoring of water. In December 2006 the monitoring programmes were provisionally approved by the MoE, with the condition that the question of their financing would be resolved in the years to come.

10.2 Plans for development of water supply and sewerage systems

In 2006 work continued on the processing of the Plan for the Development of Water Supply and Sewerage Systems of the Czech Republic on the basis of section 29 paragraph 1 letter c) Act No 274/2001 Coll., concerning water supply and sewerage systems for public use and concerning the amendment of certain associated acts, as subsequently amended. The end of work is assumed at the end of 2007.

The Plan for the Development of Water Supply and Sewerage Systems of the Czech Republic (referred to hereinafter as the „PDWSSS CR“) will be the strategic document of state policy in the field of water supply and sewerage systems exceeding the measures of departmental policies of central water authorities with shared competencies.

The PDWSSS CR will be the concept for the development of water supply and sewerage systems of the Czech Republic connecting up with other strategic documents, in particular the Concept of Water Management Policy of the MoA for the Period After the Accession of the Czech Republic to the European Union (2004 – 2010).

The PDWSSS CR is classified as a concept which is subject to the evaluation of environmental impact pursuant to Act No 100/2001 Coll., concerning

the evaluation of environmental impact and concerning the amendment of associated acts (act concerning evaluation of environmental impact), as amended by Act No 93/2004 Coll., and also pursuant to Act No 114/1992 Coll., concerning protection of nature and the countryside, as subsequently amended. As a result it also takes into account the requirements arising from these acts in a corresponding manner.

In October 2006 the MoA submitted to the department for assessment of environmental impact and integrated prevention and restriction of pollution (IPRP) of the MoE an Announcement of Concept of PDWSSS CR. The submitted announcement was subject to determination proceedings pursuant to section 10d of the specified Act No 100/2001 Coll., as subsequently amended.

In November 2006 the MoE issued the conclusion of the determination proceedings, which can also be inspected on the Information System SEA on the internet pages MoE – code concept MZP049K.

The PDWSSS CR will include information and solutions which are in compliance with the general goals of the prepared (and, in the period of September 2004 to May 2005, approved by the councils of the individual regions) Plan for the Development of Water Supply and Sewerage Systems for the territories of the regions of the Czech Republic (referred to hereinafter as „PDWSSR“), which are the basic element for planning in the field of water supply and sewerage systems.

On the basis of section 29 paragraph (1) letter d) Act No 274/2001 Coll., concerning water supply and sewerage systems for public use and concerning the amendment of certain associated acts, as subsequently amended, the MoA discusses and records proposals for changes and updates of the PDWSSR.

In 2006 the MoA issued a total of 302 standpoints for proposed changes to the technical solution for supply of drinking water, sewerage removal and the treatment of waste water.

The PDWSSS CR will be, in the same way as the PDWSSR, the basis for the processing of urban planning documentation

according to Act No 183/2006 Coll., concerning urban planning and the building code, as subsequently amended, for the activity of the municipal authority of a municipality with expanded competence (water authority), building authority and for the activity of a municipality in independent and transferred competence.

The PDWSSR are the basis for the processing of fundamentals of urban development, and the PDWSSR is based on it in the event that these fundamentals are already processed. The urban plan of a municipality and regulation plan do not constitute the basis for the PDWSSR.

Within the framework of the PDWSSS CR, a state administration information system will be created for the field of water supply and sewerage systems of all degrees, which will consist of a program and a database of the Plan of Development of Water Supply and Sewerage Systems of the Czech Republic. The information system of the PDWSSS CR will become one of the tools for recording basic demographic, balance, technical and economic data of the field of water supply and sewerage systems.





INTERNATIONAL RELATIONS

11.1 International cooperation on border waters

International cooperation on border waters continued successfully in 2006 with Germany, Austria, Poland and Slovakia. In the same way as in previous years, as part of cooperation on border waters, common preparation was ensured for water management constructions, common monitoring of water and sharing of hydrological data. Activities were conducted according to the approved plans of work and in coordination with the activities of the relevant permanent border commissions of the Czech Republic and neighbouring states.

As in previous years, in 2006 the MoE, in cooperation with the MoA and other ministries – interior, finance, local development, transport, trade and industry, health and foreign affairs – ensured the performance of the following bilateral treaties and agreements on cooperation on border waters:

- Succession Treaty between the Czechoslovak Socialist Republic and the Austrian Republic concerning the Regulation of Water Management Questions on Border Waters, which was signed on the date 7.12.1967 and became valid on the date 18.3.1970,
- Agreement between the Government of the Czech Republic and the Government of the Slovak Republic concerning Cooperation on Border

Waters, which was signed on the date 16.12.1999 and on that date became valid,

- Treaty between the Czech Republic and German Federal Republic concerning Cooperation on Border Waters in the Area of Water Management, which was signed on the date 12.12.1995 and became valid on the date 25.10.1997,
- Succession Convention between the government of the Czechoslovak Republic and the government of the Polish People's Republic concerning Water Management on Border Waters, which was signed on the date 21.3.1958 and became valid on the date 7.8.1958.

Within the context of the specified treaties and agreements, in 2006 there was a meeting of the bilateral commissions for border waters with Slovakia, Austria and the Federal Republic of Germany and discussions of the representatives of the governments of the Czech Republic and Poland for cooperation on border waters.

Czech-Austrian commission for border waters

On the dates 2 to 5.5.2006 in the Czech Republic, in České Budějovice, there was the 14th meeting of the Czech-Austrian commission for border waters, at which there was an assessment of activity from the area of the regulation and maintenance of border watercourses, interstate approval for use of construction measures and billing of work, maintenance of cleanliness of border water courses, hydrology, questions of navigation, border issues, water management studies and planning which had occurred on Czech-

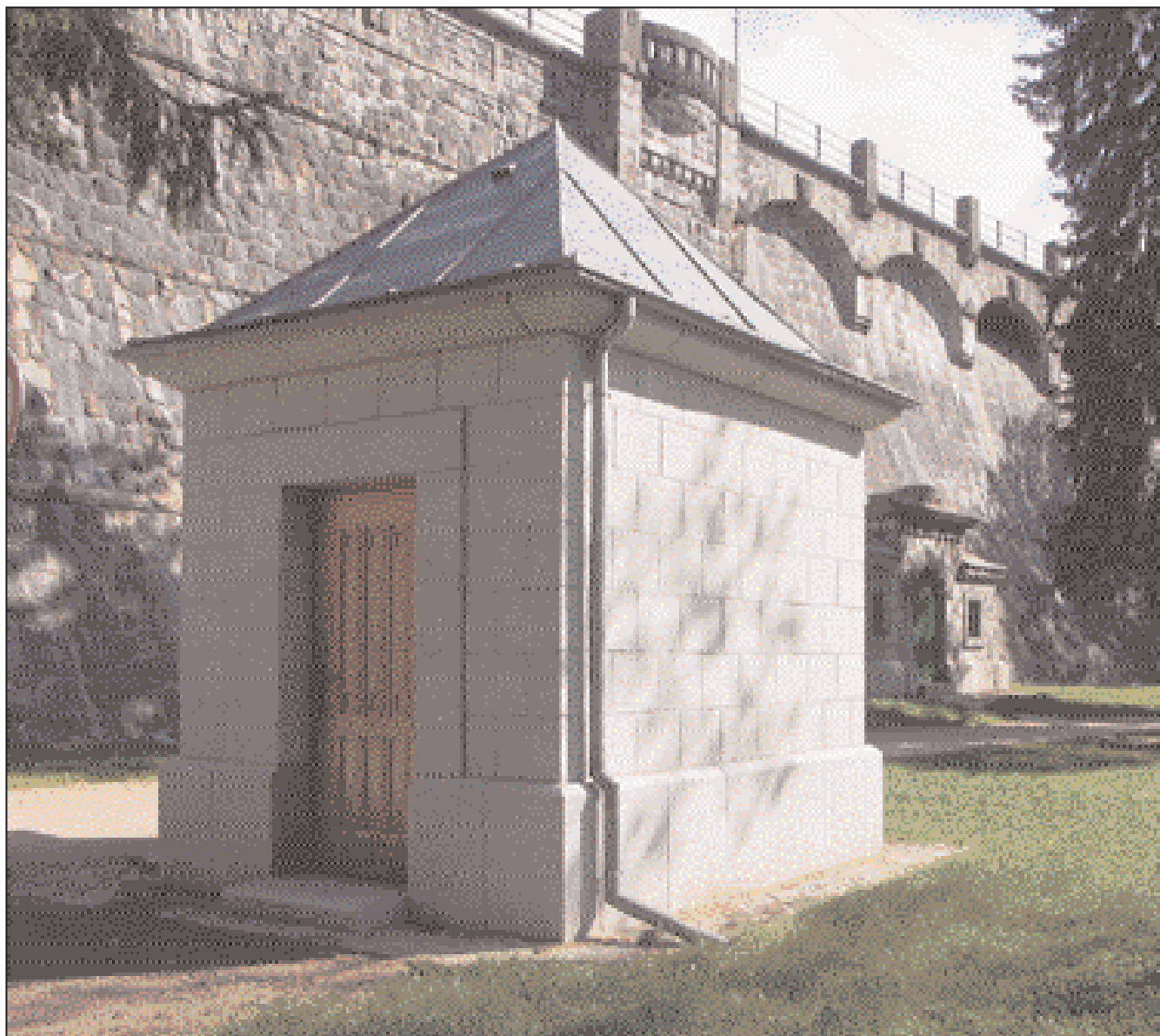
Austrian border waters since its 13th meeting in 2005.

This commission also updated the Directive for the Warning Service on Czech-Austrian Border Waters, which designates the basic rules of the warning service for the eventuality of floods and danger of ice floes, the warning service for dams, exchange of necessary hydrological and meteorological data, and the warning service for the eventuality of extraordinary pollution of border waters.

Detailed results from discussions were given in the „Protocol from the 14th Meeting of the Czech-Austrian Commission for Border Waters“, which was approved by the Ministry of the Environment on 20.6.2006.

Czech-Slovak Commission for Border waters

On the days 28. to 30.6.2006, in Prague, the sixth meeting was held of the Czech-Slovak Commission for Border Waters, at which the minutes were approved from the international approval for use proceedings for construction measures and the billing of work performed on Czech-Slovak border waters since the previous meeting of the commission in 2006, and construction measures which were planned or already performed were discussed. The commission discussed matters relating to the regulation and maintenance of border watercourses, maintenance of cleanliness of border water courses, hydrology, questions of navigation, border issues, and water management studies and planning. Beyond the scope of the agreed agenda of the commission's meeting, both parties exchanged information about the flood which impacted the territory of both



Mšenský stream, WW Mšeno

parties to the treaty at the end of March/start of April 2006.

The result of the meeting of the commission was the processing of mutually acceptable conclusions for the individual points as given in the „Protocol from 6th Meeting of the Czech-Slovak Commission for Border Waters“, which was approved by the ministry of the environment on the date 28.8.2006.

Czech-German Commission for Border waters

On the days 4. to 5.10.2006 in, Karlovy Vary, the ninth meeting of the Czech-German Commission for Border Waters was held, which discussed and approved the results of the eighth mee-

ting of the Standing Commission Bavaria on the days 26 to 28 April 2006 and the eighth meeting of the Standing Commission Saxony on the days 28. to 30.6.2006. The commission also discussed current questions of cooperation on border waters, in particular the fundamentals relating to the individual areas of cooperation, the lists of border waters and the urgent points of cooperation with the Standing Czech-German Border Commission

One of the important points on the agenda of the Commission's meeting was the discussion of „Principles for Direct Cooperation of the Relevant Bodies and Expert Sites“ and the material „Implementation of EC Framework Directive on Border Waters“. There was

once again discussion of the intention of the financing and construction of a stable emergency profile Elbe in the border profile with Germany. These facilities should prevent the spread of oil pollution to Germany.

The results of the meeting of the Commission were given in the „Protocol of the 9th Meeting of the Czech - German Commission for Border Waters“, which was approved by the minister of the environment on the date 22.12.2006.

Discussions of representatives for cooperation on Czech-Polish border waters

On the dates 27. to 30.11.2006 in Wist, the eighth meeting was held of the representatives of the government

of the Czech Republic and government of the Polish Republic for Cooperation in the Area of Water Management on Border Waters, which discussed and approved the activities of the working groups in the area of regulations of border water courses, water management planning, water supply, land reclamation of border territories and hydrology and flood services and water management questions influencing a joint state border. The working groups of both treaty parties were charged with tasks in the individual areas of cooperation, and the plans of work for the period to come were approved.

The representatives established a joint working group of the WFD (Water Framework Directive) for implementation of the EC Framework Directive for Water Policy 2000/60/EC and took due note of the fact that in 2006 work continued on the new monitoring system of Czech-Polish border waters pursuant to this directive. From the annual „Report on State of Quality of Border Waters in 2005“ it was evident that in this year there was an improvement in quality in comparison with 2004 by 6 %, and for 90 % of indicators water quality in the monitored border profiles ranged from quality class I to III (very clean water to very slightly polluted).

The matter of the protection of border meanders of the Odra remained the focus of attention of the representatives. In view of the fact that the expanded discussions of experts of both parties in this matter did not reach a common conclusion, the representatives agreed on the need to prepare variant expert reports taking into account the inception of possible damage, climatic and hydrological changes, and containing a proposal for any solutions, including financial evaluation.

The results from the discussions of the representatives were given in the „Protocol concerning the 8th Discussions of the Representatives of the Government of the Czech Republic and the Government of the Polish Republic for Cooperation in the area of Water Management on Border Waters“, which was approved by the minister of the environment on the date 31.1.2007.

As in previous years, in 2006 as part of cooperation on border waters the common preparation of water management constructions, joint monitoring of water quality and exchange of hydrological data which proved itself of use during the flood in August 2002 was ensured. Activities were performed pursuant to the approved plans of work and in coordination with activities of the relevant standing border commissions of the Czech Republic and neighbouring states.

11.2 International and regional cooperation in unified catchment areas of the European rivers Elbe, Odra and Danube

The active participation of the Czech Republic in international commissions for the protection of the international catchment areas of the Elbe, Danube and Odra continued successfully in 2006 on the basis of the Agreement on the International Commission for Protection of the Elbe, Convention on the Protection and Acceptable Utili-

isation of the Danube, and Agreement on the International Commission for the Protection of the Odra from Pollution. One of the most important themes of the work of all three commissions in 2006 was the preparation of programmes for monitoring pursuant to article 8 of the Framework Directive.

Agreement on International Commission for Protection of the Elbe

The ICPE is the most important panel of cooperation in the field of water protection in the catchment area of the Elbe. Its activity focuses on reducing the pollution of the Elbe and its tributaries, programmes for the measuring and monitoring of water quality, improving the state of water and aquatic associated ecosystems, preventing accident pollution and, in recent years, primarily the coordinated performance of requirements of the framework directive and the improvement of flood protection. In this context in 2006 special attention was given to the preparation of programmes for monitoring the state of water in the international catchment area of the Elbe pursuant to article 8 of the Framework Directive





with the aim of ensuring a continuous and full overview of the state of water in this catchment area. The Czech Republic chaired this commission for the second year.

At the 19th meeting of the ICPE, held on the days 9 and 10.10.2006, in Český Krumlov, there was a discussion of the further procedure for the implementation of the Framework Directive in the international catchment area of the Elbe. The draft outline of the Joint Summari-

sed Report on the Monitoring Programmes in the International Catchment Area of the Elbe, joint time plan and programme of work for assembling the „Plan of the International Catchment Area of the Elbe“, „Recommendations for Informing and Consultations with the Public when Coordinating the Implementation of the Framework Directive at the International Level in the Field of the Catchment Area of the Elbe“ was approved, and the first „Overview of Signifi-

cant Problems with Water Management in the International Catchment Area of the Elbe“ was prepared. In addition the updating of the „International Warning and Emergency Plan of the Elbe“ was approved, the matter of the increased concentration of haloethers in the Elbe was discussed, and the „International Programme of Measuring for 2007“ was approved. More detailed information about the ICPE is available at www.ikse-mkol.de.

Convention on the International Commission for the Protection and Acceptable Utilisation of the Danube

On 29.6.2006, Danube Day was celebrated for the third time in all Danubian states, including the Czech Republic, the date is designated as the date of the signature of the convention. One part of the celebrations was, as in previous years, an international school art competition „Young Artists for the Danube“. The winners of the competition from the individual countries were invited on 11. to 12.12. to Vienna, upon the occasion of the 9th meeting of the International Commission for the Protection of the Danube (referred to as the „ICPD“). In the presence of the heads of delegations in the ICPD from the individual countries and other participants of the meeting, they were awarded prizes, and the main competition winner was announced. In addition to this, the MoE organised an event for school children on Danube Day in Uher-ské Hradiště. The celebrations of Danube Day have become a tradition in the Danube catchment area and will continue in the years to come.

The 9th meeting of the ICPD was held on the days 11. and 12.12.2006 and was chaired by Moldavia. The meeting was attended by delegations of all the parties to the Convention on Cooperation for the Protection and Sustainable Use of the Danube, of which there are currently 14, including the EU, the chairmen of the individual expert groups and the representatives of observer organisations. The ICPD discussed the budget for 2007 and the drafts for budgets of the years 2008 – 2010. It decided that in view of the entry of Bulgaria and Romania to the EU the key for calculating the mandatory contributions to the ICPD will be re-evaluated. Extraordinary attention was given to the preparation of the report of the European Commission on programmes for monitoring pursuant to article 8 of the Framework Directive and the preparation of the Joint Survey of the Danube, the outputs of which will be used as data for situation monitoring and intercalibration training. There was discussion of the Save the Sturgeon

Plan, in which the proposed measures should be a part of the Danube Catchment Area Plan. It was agreed that flood protection and its concrete measures will be coordinated in the context of unified sub-catchment areas (for Czech Republic it involves the sub-catchment area of the Morava). Attention was given to the termination of the regional project paid for from the resources of the UNDP/GEF. Its evaluation will be performed at the start of 2007, and it will be linked with the meeting of ministers responsible for water of the Danubian and Black Sea states. More information is available on the pages of the ICPD www.icpdr.org.

Agreement concerning International Commission for the Protection of the Odra from Pollution

In 2002, the activity of the International Commission for the Protection of the Odra from Pollution (referred to hereinafter as the ICPOP) focussed primarily on the coordination of activities associated with the preparation of monitoring programmes according to the Framework Directive in the international catchment area of the Odra, or reports for the European Commission. The report on the monitoring programmes in the international catchment area of the Odra represent the mutually agreed procedure of the participating countries in this area.

The ninth plenary session of the ICPOP was held on the days 4. to 5.12.2006 in Bratislava. At the meeting, due note was taken of the reports about the activities of the working groups. The core tasks of the ICPOP are resolved within the framework of the „Steering Group for the WFD“ (WFD – Water Framework Directive). The main themes in 2006 were questions associated with other steps in the implementation of the Framework Directive in the international catchment area of the Odra, this being in particular the preparation of a report and monitoring programmes for the European Commission and the resolution of map annexes associated therewith, the processing of a work schedule for the generation of a Plan in the international catchment

area of the Odra, processing provisional structure of Plan in the international catchment area of the Odra, and also discussion and approval of significant cross-border water management problems associated with the implementation of the database and graphic information system for presentation of the activities of ICPOP associated with the tasks arising from the Framework Directive – „Project GIS – WFD – RBD Odra“.

The working group „Accident Pollution“ updated on an ongoing basis the „International Warning and Emergency Plan of the Odra“, verified the communication plan and performed an international field emergency exercise in cooperation with rescue services. It updated and augmented the list of potential sources of accident pollution, which in the same way as the „International Warning and Emergency Plan of the Odra“ constitute a basic component of the prepared „International Emergency Plan of the Odra“.

The working group „Flood“ has been focussing for a long time on monitoring the implementation of the „Action Programme of Flood Protection“. The group actively cooperates with non-governmental ecological organisations, in particular the World Wildlife Fund (WWF).

The ICPOP discussed the change in the existing Agreement concerning the International Commission for the Protection of the Odra from Pollution (ICPOP Agreement), which should resolve the situation created by the accession of the Czech Republic and Poland to the EU and the associated withdrawal of the European Community from the ICPOP Agreement. The working group „Legal Questions“ presented a proposal for an „Agreement on the Amendment of the ICPOP Agreement“, which will be discussed internally by the individual treaty parties.

More information can be gained on the internet pages of the ICPOP www.mkoo.pl.



FISHERIES AND FISHPOND MANAGEMENT

12.1 Fisheries and fishpond management 2006

By virtue of its nature, fishery is necessarily an integral part of water management. From the aspect of the production of fish meat, it remains one of the successful areas of agricultural production.

Fishery in the Czech Republic currently produces 20 thousand tons of saleable freshwater fish per year in 24 thousand fishponds with a total area of 52 thousand ha. The most frequently farmed fish is the carp (approximately 87.1 %) in several recognised forms, herbivorous

fish, silver carp and white amur (5 %), and salmonid fish are also farmed, especially rainbow trout and American char (3.5 %), common tench (1.2 %) glass-eyed pike, northern pike, catfish and other types of fish (3.2 %).

Fishery is concentrated primarily on the territory of the South Bohemia and South Moravia Region, where the largest fish producers are. Fishpond management offers direct employment for 1 700 workers. In connection with this economic activity, other working opportunities are created. One integral part of the branch is recreational and sport angling performed on bodies of water declared by the state to be fishing reservations. The number of fishing reservations

on the territory of the Czech Republic exceeds 2 000 with an area of approximately 42 000 ha. Three hundred and fifty thousand registered members of angling federations participate in recreational angling, and they catch approximately 4.5 thousand tons of fish per year. Both of these elements of fishery, the productive and the sporting, are regulated by three-stage state administration (municipal authorities of municipalities with expanded competence, regional authorities, ministry) within the framework of legal requirements. This area of agricultural basic production is regulated by Act No 99/2004 Coll., concerning fishery, and the implementing decree for this act No 197/2004 Coll.



Table 12.1.1
Overview of production of fish intended for direct consumption in the years 2002 – 2006

Indicator of production and consumption of fish	2002	2003	2004	2005	2006
Production in thousand tons	19,2	19,7	19,4	20,5	20,4
Of this: export in thousand tons	9,2	9,6	9,9	9,3	10,0
Catches in reservations in thousand tons	5,1	5,3	4,7	4,2	3,9 *
Consumption per person in kg/year	1,43	1,49	1,46	1,40	1,40

Source: MoA and Fishery Association of the Czech Republic
Note: * Qualified estimate.

Table 12.1.2
Measures 2.3 – Fishery

Number of sub-measure	Name of sub-measure
Sub-measure 2.3.1	Processing of fish and marketing of fish products
Sub-measure 2.3.2	Cultivation of aquatic organisms – aquaculture
Sub-measure 2.3.3	Activities performed by experts in fishery and promotional measures

Source: MoA

The processing of fish is associated with the actual production of fish. Sea fish are also imported to supply the market. Every year 9 to 11% of the market production of freshwater fish is processed.

In the Czech Republic the branch of fishery contributes approximately CZK 1.1 billion in current prices to gross domestic product, which represents 0.04 % of gross domestic product. Despite this low percentage, in regional terms it is a highly significant economic component which helps to maintain employment in the countryside. In recent years an increasingly great emphasis is placed on the non-productive function of fishponds in the landscape such as the environmental, water management, recreational and landscaping function. A high-quality system of fishponds significantly limits flood damage. This demonstrably occurred in 2002 and 2006.

With the accession of the Czech Republic to the EU, the possibilities of support for the fishery sector increased. At present the following support resources are used:

- National departmental support concerning aquaculture and freshwater fishing Checking of Performance, Special Consultation for Animal Production, Support for Non-Production Functions of Fishponds and Genetic Sources.
- Operational programme – „Development of Countryside and Multi-

functional Agriculture” (referred to hereinafter as „OP Agriculture“). This is a programme document

prepared for the period 2004 – 2006 and based on Council Regulation (EC) No 1260/1999, laying down general provisions on the Structural Funds, and Council Regulation (EC) No 1257/1999, on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF). The parts of OP Agriculture dealing with fishery are based on Council Regulation (EC) No 1263/1999, on the Financial Instrument for Fisheries Guidance (FIFG). Fishermen can draw financial resources from the OP Agriculture for measures see Table 12.1.2.

For the next programme period 2007 – 2013 a separate OP Fishery is





Křimovský stream, WW Křimov

being prepared which expands the current possibility of grants.

12.2 Changes in state of fishponds

In 2006 the programme of the MoA 229 210 – „Renewal, dredging and reconstruction of fishponds and reservoirs”, the aim of which is the overall improvement of the technical state of fishponds and the reinforcing of water management and non-production functions of fishponds with regard to their flood prevention and landscaping significance, was terminated.

In total during this last year 54 events were financed, of which 9 were initiated

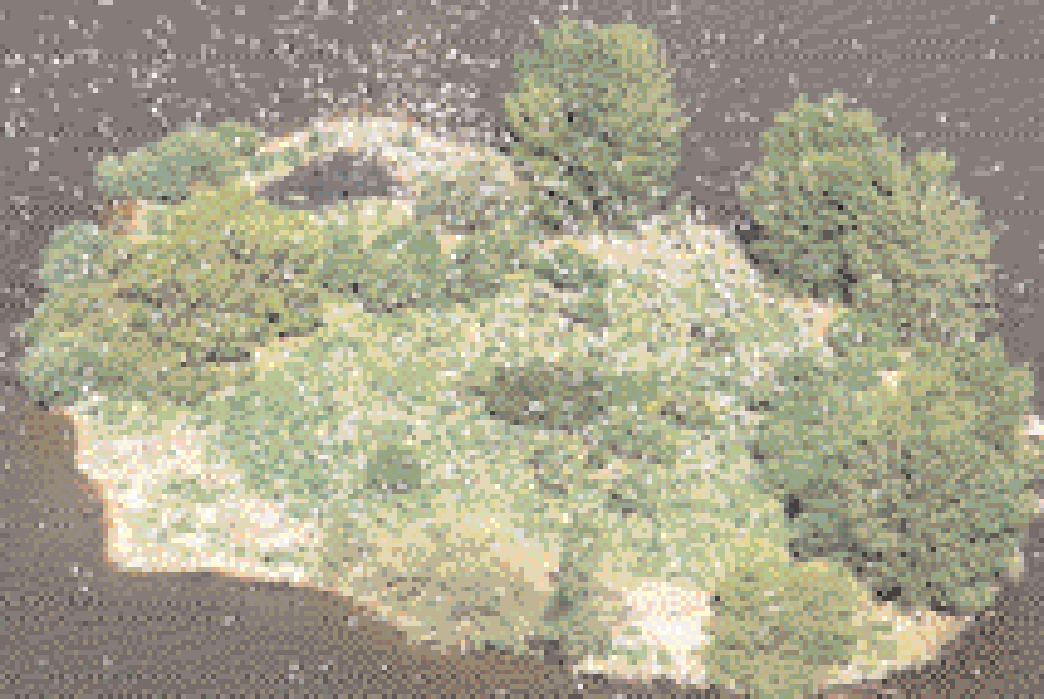
in the preceding year 2005. The volume of financial resources drawn in 2006 was CZK 330.269 million.

Under the sub-programme 229 212 – „Renewal, dredging and reconstruction of fishponds and reservoirs”, in 2006 44 events were initiated for which financial resources of CZK 321.255 million were drawn. Of these events, 15 are incomplete and their financing must be continued in 2007.

Under the sub-programme 229 218 – „Rectification of damage to fishponds and reservoirs following the floods of August 2002”, in this year one event was financed, for which CZK 9.014 million was drawn.

In 2006 there were preparations for the follow-up programme 129 130 – „Support for renewal, dredging and reconstruction of fishponds and construction of reservoirs”, but it will be

implemented in 2007. The renewal and reconstruction of fishponds and reservoirs will focus on improving their water management and non-production functions. Emphasis will be placed in particular on reinforcing retention abilities. Attention will also be given to the safety of operation of fishponds and reservoirs in connection with flood situations. In support of retention work will also continue on dredging the most silted up fishponds, and it will also be possible to support the construction of reservoirs serving for flood protection and protection from drought. As a result of experience from previous years where there has been an increased incidence of flooding, the rectifying of flood damaged caused by spring and summer floods has been included in the programme.



RESEARCH AND DEVELOPMENT IN WATER MANAGEMENT

13.1 Research and development in the competence of the Ministry of Agriculture

In 2006, the Ministry of Agriculture financed specific purpose research and development in the field of water management as part of research projects with more than CZK 18 million of resources.

Compared with 2005 there was an increase in specific purpose financial resources by CZK 2399 thous. Overall in 2006 a total of CZK 18 375 thous. was expended on support for water management research and development (referred to hereinafter as „R&D“) in the context of the departmental Research Programme of the MoA 2003 – 2007 and National Research Programme I. R&D projects started in 2003 received an amount of CZK 8 640 thous., CZK 5 540 thous. was provided to R&D projects initiated in

2004, and CZK 4 195 thous. went to R&D projects initiated in 2005. In 2006 no new projects were initiated. The projects focus on protection of soil and water with permanently sustainable development of the agrarian sector, the creation, revitalisation and protection of the culture of the landscape, forests and bodies of water and rationalisation of water management.

An overview of the research and development projects individually dealt with and initiated is summarised in Table 13.1.1. All the publicly accessible

Table 13.1.1

Research and development projects in the field of water management financed from the chapter of the Ministry of Agriculture in 2006

Projekt No	Name of project	From to	Coordinator	Financial resources (thous. CZK)	Project No
QF3013	Development of hydric effect of forests of small mountain catchment areas	01.01.2003 31.12.2007	Research Institute of Forestry Management and Hunting	932	NRP
QF3028	Development of new technologies for the breeding of economically significant river species of fish and crayfish threatened by the degradation of the natural environment	01.03.2003 30.11.2007	South Bohemia University in České Budějovice	1 414	MoA
QF3094	Changes in properties of drained and long-term irrigated soils and impacts on soil and water protection	02.01.2003 31.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	860	NRP
QF3095	Rationalisation of use, maintenance and repairs of drainage constructions	01.02.2003 31.12.2006	Research Institute of Ameliorations and Soil Conservation Prague	1027	NRP
QF3098	Increasing anti-erosion effectiveness of crops grown	01.01.2003 31.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	1 325	MoA
QF3100	Evaluation of growth of climatic drought in agriculture and lessening its consequences by irrigation	01.03.2003 31.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	1 335	NPV
QF3301	Diagnostics, monitoring and revitalisation of drainage systems for agricultural soils from the aspect of protection of water quality	01.03.2003 31.12.2006	Research Institute of Ameliorations and Soil Conservation Prague	1 747	NRP
QF4061	Landscape plans for microregions in connection with the resolution of landscape measures of a significant watercourse	01.02.2004 30.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	1 275	MoA
QF4062	Verifying influence and extent of adding grass cover to land and land reclamation in selected localities on the nitrate burden of surface water and groundwater as the basis for measures in Action Programmes	01.02.2004 31.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	1 665	MoA
QF4124	Protection of water in drained source areas	01.02.2004 31.12.2007	Research Institute of Ameliorations and Soil Conservation Prague	728	MoA
1G46036	Innovations of process for water treatment and ensuring high quality of drinking water in distribution systems	01.04.2004 31.12.2008	Czech University of Technology Technology in Prague, Construction Faculty	1 092	NRP
1G46040	Monitoring and evaluation of extreme outflow conditions in catchment areas of small watercourses from the aspect of prevention and lessening of flood damage	01.04.2004 31.12.2008	Research Institute of Ameliorations and Soil Conservation Prague	780	NRP
1G57016	Rainfall-outflow conditions of mountain forests and their possibilities for ameliorating extreme hydrological situations – floods and droughts	01.02.2005 31.12.2008	Mendel Agricultural and Forestry University in Brno	897	NRP
1G57040	Methodology for designing and building optimal variants of flood-prevention and anti-erosion measures measures (FPAEM) for ameliorating extreme hydrological situations – floods and droughts in the landscape	01.02.2005 31.12.2008	Czech Agricultural University in Prague	1 088	NRP
1G57071	Integrated approach for resolution to the use of rainwater in the urban area	01.02.2005 31.01.2008	University of Technology in Brno	470	NRP
1G58052	Research into solution for degradation of drinking water quality during its accumulation	01.12.2005 31.12.2008	Water Management Research Research Institute T.G. Masaryk Prague	1 000	MoA
1G58095	Forecasting soil -agrohydrological models of soil water retention in the Czech Republic into the database of EU countries	01.12.2005 30.11.2009	Czech Agricultural University in Prague	740	NRP
Total				18 375	

Source: MoA



Kamenická river, Buky nad Kamenickou

data about these projects is available on the internet pages of the Council for Research and Development www.vyzkum.cz and in the Central Records of Projects (CRP). Data about the results from solutions of the R&D projects terminated in 2006 is also available in the Register of Information about Results (RIR). Other information about research and development in the area of water management can also be found on the pages of the National Agency for Agricultural Research of the Ministry of Agriculture www.nazv.cz.

One part of the National Research Programme (provider MoA) is the thematic programme „Competitiveness with Sustainable Development“, the sub-programme „Utilisation of Natural Resources“. The priorities of this sub-programme include the development of technology for the treatment and cleaning of water and improvement in effectiveness of managing water in the landscape with the aim of ensuring the

cleanliness and quality of drinking water, and avoiding and ameliorating the consequences of hydrological extremes (floods and droughts).

In 2006 the Research Institute of Ameliorations and Soil Conservation continued work on the research intention Ameliorating the adverse natural and anthropogenic impacts on the soil and water.

Research and development in the field of the protection, preservation and utilisation of basic natural resources – soil and water in agriculture and for the development of the countryside area is dealt with in the years 2004 – 2008 by RIASC. In 2006 this research intention MZE0002704901 was supported by financial resources in the amount of CZK 30 563 thous.

In addition to the described participation in research projects financed by the MoA, the RIASC also participated

in projects of the Grant Agency of the Czech Republic, the, MoE and the Ministry of Schools, Youth and Physical Education.

13.2 Research and development in the competence of the Ministry of the Environment

In 2006, the main research organisation in the competence of the Ministry of the Environment dealing with the issue of water protection was the Water Management Research Institute T. G. M.; other significant tasks were dealt with by the Czech Hydrometeorological Institute and other institutions (or they significantly contributed to their solving). More than CZK 55 million was spent in the competence

Table 13.2.1**Research and development projects in the field of water management financed from the chapter of the MoE in 2006**

Project No	Name of project	From to	Coordinator	Financial resources (thous. CZK)
SA/650/5/03	Elbe IV	2003 – 2006	T.G.M. Water Management Research Institute	14 320
SA/650/3/03	Morava IV	2003 – 2006	T.G.M. Water Management Research Institute	10 600
SA/650/1/03	Odra III	2003 – 2006	T.G.M. Water Management Research Institute	9 000
SA/650/2/03	Establishing Register of Protected Territories, Including Maps of Register Content	2003 – 2006	T.G.M. Water Management Research Institute	2 400
SL/8/53/04	Monitoring Interaction of Abiotic Components of Aquatic Ecosystems and Plants from the Aspect of Their Contamination by Heavy Metals	2004 – 2006	GEOtest Brno, a.s.	134
SL/8/59/04	Research into Aquatic Ecosystems in Catchment Areas	2004 – 2006	T.G.M. Water Management Research Institute	1 340
SL/1/13/04	Rainfall–Outflow and Riverbed–Formation Processes in Catchment Areas of Watercourses	2004 – 2006	Czech University of Technology in Prague	1 408
SL/1/21/04	„Inventory of Interventions in the Aquatic Regime of Peat Bogs on the Territory of the Šumava National Park and Evaluation of Success of Revitalisation Measures Performed“	2004 – 2006	Administration of National Park and Protected Countryside Area Šumava	400
SL/1/6/04	Dynamics of Rivers in Alluvial Areas of the Czech Republic. Strengthening the Retardation of Outflow of Water in the Landscape and Management of Processes for Transformation of Nutrients in the Catchment Area	2004 – 2006	Institute of System Biology and Ecology of the Academy of Sciences of the Czech Republic	1 590
1D/2/20/II/04	Water Management Revitalisation and Flood Protection	2004 – 2006	Ekologické služby, s.r.o.	2 130
1D/1/5/05	Development of Methods for Predicting Drought States and Flood Situations on the Basis of Infiltration and Retention Properties of Soil Cover of the Czech Republic	2005 – 2007	Czech Hydrometeorological Institute	1 976
1D/7/22/II/04	Research of New Methods, Development and Application of Technology for Utilisation of Water with High Content of Solid Substances	2004 – 2007	MEMSEP, spol. s r.o.	2 595
SM/2/57/05	Long-term Changes in Riverine Ecosystems on Alluvial Plains of Watercourses Affected by Extreme Floods	2005 – 2008	Charles University in Prague	3 245
SM/3/4/04	Research and Development of Technology for the Area of Treatment of Toxic Waste Water from Industrial Activities and from Old Ecological Burdens, with Emphasis on Elimination of Heavy Metals and Organic Compounds.	2004 – 2006	Research Institute of Organic Syntheses a.s.	4 000
Total				55 138

Source: MoE

of the MoE on researching projects of science and research in the field of water protection in 2006.

2006 was the second year of the implementation of the research intention of the MoE 0002071101 – Research and Protection of the Hydrosphere –

research into relations and processes in the water component of the environment, focussing on the impact of anthropogenic pressures, its permanent use and protection, including legislative instruments. The provider of the grant is the Czech Republic – MoE. The recipient of the grant was the WMRI T.G.M.

In 2006 the solution of science and research projects from the field of water protection (including associated areas) was performed within the programme of the Government Research and Development Board. It involves the projects given in Table 13.2.1.



EXPLANATIONS OF ABBREVIATIONS IN THE TEXT

AGN	European Agreement on Main Inland Waterways of International Importance
AOX	absorbable organic halogens
APNC	Agency for Protection of Nature and the Countryside of the Czech Republic
AWMA	Agricultural Water Management Authority
BCO₅	five-day biochemical consumption of oxygen
CBC	Cross Border Co-operation
CCO_{cr}	chemical consumption of oxygen, oxidation by potassium dichromate
CCO_{Mn}	chemical consumption of oxygen manganese
CEB	Council of Europe Development Bank
CEI	Czech Environmental Inspectorate
CF	Cohesion Fund
CHMI	Czech Hydrometeorological Institute
CRWC	Central Register of Watercourses
CSO	Czech Statistical Office
ČSN	Czech state norm
DDD	1,1,dichloro-2,2-bis(p-chlorophenyl) ethane
DDE	2,2-bis(p-chlorophenyl)1,1-dichloroethylene
DDT	1,1,1-trichloro-2,2-bis(p-chlorophenyl) ethane
DEHP	di(2-ethylhexyl)phthalate
DIS	dissolved inorganic salts
EC	European Community
EDTA	ethylenediaminetetraacetic acid
EEC	European Economic Community
EI	equivalent inhabitants
EIB	European Investment Bank
ERDF	European Regional Development Fund
EU	European Union
EUR	common currency of the European Economic and Monetary Union (euro)
FCSN	Fund of cultural and social needs
GEF	Global Environmental Facilities
ICPD	International Commission for the protection of the Danube Catchment Area
ICPE	International Commission for the protection of the Elbe Catchment Area
ICPOP	International Commission for the Protection of the Odra from Pollution
MCPP	butylglycoester (herbicide)
MDF	Main Drainage Facility



EXPLANATIONS OF ABBREVIATIONS IN THE TEXT

MF	Ministry of Finance
MoA	Ministry of Agriculture
MoD	Ministry of Defence
MoE	Ministry of the Environment
MoH	Ministry of Health
MoT	Ministry of Transport
NACE	Branch classification of economic activity
NTA	Nitrilotriacetic acid
OECD	Organisation for Economic Co-operation and Development
PAH	polyaromatic hydrocarbons
PAIS	Public Administration Information System
PCB	polychlorinated biphenyls
PDTA	1,3-propylenediaminetetraacetic acid
PDWSSS CR	Plans for the Development of Water Supply and Sewerage Systems of the Czech Republic
PDWSSSR	Plans for the Development of Water Supply and Sewerage Systems for the Territories of the Regions
PF ČR	Land Fund of the Czech Republic
PHARE	Pologne-Hongrie Actions pour la Reconversion Economique
PRRS	Program for Revitalisation of River Systems
Q_a	long-term average flow
Q_m	long-term average monthly flow
Q_N	maximum flow attained or exceeded once every N years
R&D	research and development
RIASC	Research Institute of Ameliorations and Soil Conservation
SEF	State Environmental Fund of the Czech Republic
SHEP	small hydroelectric power station
SS	solid substances
STIF	State Transport Infrastructure Fund
TFA	tangible fixed assets
TOC	Total Organic Carbon
UNDP	United Nations Development Programme
WCI	Watercourse identifier
WMRI T.G.M.	Water Management Research Institute T.G. Masaryk
WSSS	water supply systems and sewers
WW	waterworks
WWTP	waste water treatment plant





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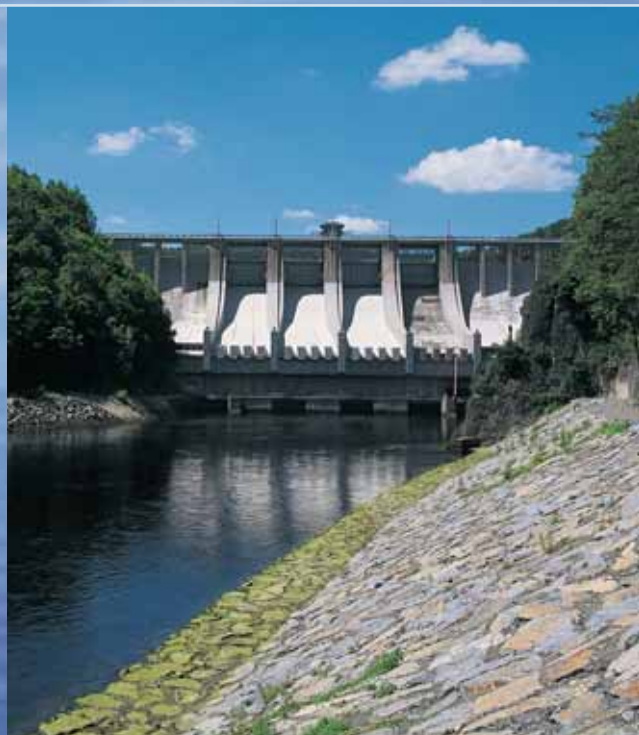
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