REPORT ON THE STATE OF WATER MANAGEMENT IN THE CZECH REPUBLIC 2002

BY DECEMBER 31, 2002
Dear readers,

You hold in your hands the “Report on the State of Water Management in the Czech Republic in 2002”, described in brief as the Blue Report 2002, which records the changes during the first period from the start of the effectiveness of the new legal regulations which are central from the aspect of water management.

This publication follows on from the similar material processed for the years 1997 – 2001 which the Ministry of Agriculture publishes every year. It represents comprehensive information material about all the areas of activity in water management for the year 2002, and it contains, in particular, a description of the state in main indicators, which is augmented for selected areas with developmental trends. The report gives a summarised description of the state of surface water and groundwater, following on from the previous years it summarises the output of the water management balance, administration of watercourses, measures to ameliorate the harmful effects of water, especially floods, area of public water supply and sewerage systems, sources of water pollution and protection of water, financial support for investments into water management and improving the state of the countryside, legislative measures, international relations, fisheries and fishpond management and research and development within the context of water management.

In view of the catastrophic floods in August last year, in the Blue Report 2002 there is an increased emphasis on describing the newly established antiflood programmes within the context of programme financing and a recapitulation of implemented measures in flood prevention, including information about the securing of financial resources, in particular from the sources of the European Investment Bank.
The aim of the report is to provide aggregate data following on in a time sequence and summarised information providing the most precise overview of all activities included in the system of water management.

The reader will find detailed information about the supply of drinking water from water supply systems for public need and the channelling and treatment of municipal waste water in the material “Water Supply Systems and Sewerage Systems in the Czech Republic 2002” prepared by the Ministry of Agriculture. Information about the quality of surface and groundwater, sources of pollution and measures for water protection is to be found in the “Report on the State of Protection of Water from Pollution” prepared by the Ministry of the Environment.

I hope that this now traditional and sought-after publication will constitute a high-quality source of information this year, and not only for water management experts, but that it will also help to satisfy the general demand for information about this important component of the environment amongst the general public.

Mr. Jaroslav Palas
Minister of Agriculture Czech Republic
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1. STATE OF SURFACE WATER AND GROUNDWATER

1.1 Hydrological balance

- The total rainfall in the year 2002 was the heaviest for the past thirty years.

  In the year 2002 an average of 864 mm of rain fell on the territory of the republic, which with regard to the long-term average for 1961-1990 corresponded to 130% of the norm. Overall it was an above-average year for rainfall, and the rainfall was the heaviest for the past thirty years. On average, 55 mm more of rain fell on the territory of the Czech Republic, but in Moravia and Silesia the rainfall was approximately 50 mm less in comparison with 2001, whereas in Bohemia rainfall in the year 2002 was 100 mm higher than in 2001.

- For the course of outflow during 2002, for most flows three main outflow periods were characteristic. In the first, above-average water states predominated until mid-April. The second period was drier and warmer and there was a predominance of below-average water states. In contrast with this, the third, five-month, period from August to the end of the year was distinguished by above-average water states with frequent floods. The year 2002, with a greater number of smaller floods in the spring, autumn and winter period was remarkable primarily because of the catastrophic August flood. The August flood in the Czech Republic affected 8 regions and was caused by two waves of intense rain which fell on virtually the entire Vltava basin as well as the Elbe basin, part of the Ohře basin and most of the Dyje basin.

The catastrophic August flood occurred in two waves from 5th to 7th August and from 11th to 18th August 2002. The volume of rain which fell on the territory of the Czech Republic in the period from 6th to 15th August was huge. According to the Czech Hydro-Meteorological Institute (referred to hereinafter as the CHMI), it was 6.95 km$^3$ on the entire territory belonging to the Elbe basin (up to the state border), of this 4.98 km$^3$ in the Vltava basin. And on the days 6th to 7th August 1.87 km$^3$ fell in the Vltava basin, and 2.02 km$^3$ fell in the entire Elbe basin. On the days 11th to 12th August, 2.77 km$^3$ fell in the Vltava basin, and 3.91 km$^3$ of water fell in the entire Elbe basin.

The first wave of the flood was most marked in the basin of the Malše, the upper Lužnice and the middle Otava with the tributaries of the Volýňka and Blanice. The repetition period for culmination flows in the Malše exceeded 500 years, and the culmination flow of the Vltava below the Malše was at the level of 500-year to 1000-year flows. In the upper reaches of the Lužnice the maximum flow was at fifty-year levels. The middle and lower Otava with tributaries culminated at the 20-year flow levels. The middle and lower Otava with tributaries culminated at the 20-year flow levels. In the basin of the Sázava the first wave of rainfall impacted only the basin of the Želivka, but this was eliminated by the system of reservoirs in the basin. The first wave of rainfall on the days 6th – 7th August caused 5-year to 10-year flows in the upper reaches of the Dyje basin in south-western Moravia, but these were held back by the Vranovská dam. The second, main, flood wave began with the onset of the second rainfall incident from 11th to 18th August. Culminations occurred in the Vltava basin most frequently

Table 1.1.1 Renewable sources of water in years 1993 – 2002 in millions of m$^3$

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Evapotranspiration</td>
<td>43.792</td>
<td>37.683</td>
<td>43.950</td>
<td>37.461</td>
<td>39.859</td>
<td>42.750</td>
<td>35.381</td>
<td>40.353</td>
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<td>Annual inflow $^1$</td>
<td>486.0</td>
<td>553.0</td>
<td>645.0</td>
<td>825.0</td>
<td>653.0</td>
<td>541.0</td>
<td>550.0</td>
<td>573.0</td>
<td>763.0</td>
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<td>Sources</td>
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<td></td>
<td></td>
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<tr>
<td>Useable sources</td>
<td>980.0</td>
<td>1140.0</td>
<td>1400.0</td>
<td>1380.0</td>
<td>1330.0</td>
<td>1390.0</td>
<td>1204.0</td>
<td>1440.0</td>
<td>1625.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Czech Hydro-Meteorological Institute
1) Annual inflow to the Czech Republic from neighbouring states
2) Annual outflow from the Czech Republic
3) Designated as flow in main basins with 95% ensuring...
on 13th August. On the Vydra, upper Blanice, Volyňka, middle Otava and the Vltava upstream of the water structure Lipno culminations occurred on 12th August, on the middle and lower Lužnice it occurred on 15th to 16th August. From the aspect of the frequency of repetition, the flows on the Vltava were most significant from Český Krumlov, but especially below the mouth of the Mašice in České Budějovice, where the periodicity for repetition of maximum flow is estimated at more than 1000 years. In the river network of the Mašice there was an overall incidence of maximum flows with a periodicity of repetition of 200 – 500 years, in the concluding profile, even here the period of repetition exceeded 1000 years. The periodicity of repeat of culmination flows of the second wave on the middle and lower Lužnice greatly exceeded the 500-year value. On the Otava the flood was exceptional from Sušice downstream, with an increasing periodicity of repeat in the direction downstream to the mouth into the Vltava. The periodicity of repeat for the culmination flow on the lower Blanice has been estimated by the CHMI to be more than 1000 years. The second wave of rainfall also caused catastrophic flooding of the Berounka from Plzeň to the confluence with the Vltava. The Berounka in Liblín and Beroun exceeded the 500-year periodicity of repetition, and on the middle and lower flow there was the second greatest recorded flood (the greatest occurred in 1872). As a result of the spills into the inundation in the sector upstream of Prague, the flood wave in the lower part of the flow was transformed, and the periodicity of repetition of the culmination flow upstream of the confluence with the Vltava fell to a value of a 200-year to 500-year flow. The flood wave on the Berounka had a fundamental impact on the shape and size of the flow wave in the lower section of the Vltava because the culminations of the flood waves on the Berounka and Vltava met at the same time. The flows on the Vltava in its central and lower flow were influenced by the Vltava sequence of weirs. Its influence will be examined in detail as part of the project for the evaluation of the flood. According to current information, 3900 m³s⁻¹ flowed into the Orlič reservoir at the time of the culmination, which is a flow with a periodicity of repeat exceeding 1000 years. The culmination flow was reduced by the transforming effect of the reservoir by 800 m³s⁻¹, but the maximum allowable level in the reservoir was exceeded by approximately 1.5 m. The flows in the Vltava in Prague and on its lower reaches arose through a combination of flood waves from the Berounka, the Sázava and the outflow from the Vltava sequence of weirs. The flows on the lower Elbe were given to a decisive extent by the inflow from the Vltava (the inflow from the central Elbe was relatively insignificant). The Vltava in Prague culminated on 14th August at 12 noon with a flow of 5 160 m³s⁻¹, which corresponds to a periodicity of repetition of 500 years. It was the highest ever evaluated flow in the Vltava in Prague in the history of standard observations. The spread of water and reverse surge of the Elbe from Mělník caused by the high water level of the Vltava were characteristic for further progress of the wave. The spread of water downstream of Mělník, especially at Litoměřice, had a highly significant impact for the transformation of the culmination flow. This means that the inflows from the central Elbe and Ohře no longer had practically any influence on the increase of the culmination flow of the lower Elbe. The size of the transformation of the culmination flow of the flood from Prague to Ústí nad Labem is estimated on the basis of balance calculations of CHMI as being 1 000 m³s⁻¹. Downstream of Litoměřice, the Elbe flows into the relatively narrow valley of the Czech Central Uplands. Other possibilities of the transformation of the flood wave up to the state border with Germany are limited, and the progress of the flood wave accelerated. The periodicity of repeat of the culmination flow of the flood on the lower Elbe (along the state border with Germany) reached a value of 100 to 200 years, and so there was a gradual reduction in the extremity of the flood. On the days 11th to 13th August a second significant wave of rainfall followed in the basin of the Dyje centred above the basin of the German Dyje and southern Bohemia.

Upstream of the Vranovská dam the greatest flow on 13th August was at the level of a 100-year 200-year culmination flow.

The groundwater regime had a unified character up to July 2002 on the entire territory of the Czech Republic. After culmination in February there was a gradual drop in the levels and yields of springs. But in August there was significant regional differentiation as a result of the uneven rainfall.

In the west and in southern Bohemia, including parts of south west Moravia, as a result of extreme rainfall reserves of groundwater were topped up to the maximum of several years. In the remaining parts of the territory, a rise in levels and yields of springs was also recorded, but they did not generally exceed the usual level or even the spring maximum.
1. State of Surface Water and Groundwater

Picture 1.1.1 Total rainfall in the Czech Republic in 2002 in millimetres

Source: VÚV T.G.M. from data of CHMI

Picture 1.1.2 Total rainfall in Czech Republic in 2002 in % of average 1961 – 1990

Source: VÚV T.G.M. from data of CHMI
The yield of springs reflects the filling of reserves of groundwater outside the riverine zone. In 2002, a blanket distribution of rainfall, properties of hydrogeological structure and local position of springs was manifested. Overall the average yield of springs reached 112% of the long-term average. The spring culmination occurred for most springs in the period from February to March. It generally reached 130-160% of the long-term average, and reserves of groundwater were estimated to be 122% of the long-term average.

1.2 Quality of surface water

In the course of the past decade, the quality of water in watercourses has improved significantly.

The results of the evaluation of the quality of surface water for the two-year periods 1991-1992 and 2001-2002 in the so-called basic classification are given in the appended maps of water quality on Pictures 1.2.1 and 1.2.2. Overall it is possible to state that in the course of the past decade the quality of water in watercourses has increased significantly.

Since 1991 V. class water quality (very heavily polluted water) has been eliminated both in the main watercourses (Elbe, Vltava, Morava and the Odra) and on most of their significant tributaries. In the course of the period 1991 – 2002 there was a changeover from class V. to class IV. (heavily polluted water) to class III. (polluted water) and on some sections of other rivers (the Úp, Tichá Orlice, Chrudimka, Doubra, Mže, Uhla, Úsava, Berounka, parts of the Sázava, the Želivka, Volyňka, Lužnice downstream of Veselí nad Lužnicí, Óš downstream of Karviná, Ostravice, Bečva, Oskava, Svitava downstream of Blan- sko, the lower part of the Jihlava and other small sections of rivers). On the Ohře, water of class II (slightly polluted water) has been achieved for approximately half of its length.

In August 2002, a wholly exceptional flood situation affected the rivers of the Vltava basin, the Ohře basin and the Elbe basin downstream of the confluence with the Vltava. As a result of high water levels, waste water treatment plants were flooded; 120 WWTPs were put out of action, of which 29 were large and had a capacity above 10,000 EI, treatment of waste water was interrupted. The operation of the WWTPs was renewed gradually, most of them being put back into action within six weeks after the flood, and others (for example CWWTP Prague) by the end of 2002. The flood situation made necessary in the affected rivers exceptional monitoring of water quality, on which the following cooperated: the Ministry of the Environment (ME), Vltava River Board Corporation, Elbe River Board Corporation, and the T.G.M. Water Management Research Institute (referred to hereinafter as the VÚV. T.G.M). The procedure for putting the WWTPs into operation was monitored by the Czech Environmental Inspectorate (referred to hereinafter as the "CEI"). Both the stoppage in the operation of WWTPs and the leakage of substances from industrial enterprises had only a temporary negative impact on water quality in watercourses and did not influence the long-term overall positive state and development of water quality in watercourses.

The long-term improvement in water quality was due primarily by the construction or intensification of decisive...
### 1. State of Surface Water and Groundwater

#### Picture 1.2.1  Quality of water in watercourses of the Czech Republic 1991 – 1992

[Image of watercourse map with classification]

EVALUATION PURSUANT TO ČSN 75 7221
Basic classification

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>I. and II. unpolluted</td>
<td></td>
</tr>
<tr>
<td>III. polluted</td>
<td></td>
</tr>
<tr>
<td>IV. heavily polluted</td>
<td></td>
</tr>
<tr>
<td>V. very heavily polluted</td>
<td></td>
</tr>
</tbody>
</table>

Source: CHMI

#### Picture 1.2.2  Quality of water in watercourses of the Czech Republic 2001 – 2002

[Image of watercourse map with classification]

EVALUATION PURSUANT TO ČSN 75 7221
Basic classification

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
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<td>I. and II. unpolluted</td>
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<td>IV. heavily polluted</td>
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<tr>
<td>V. very heavily polluted</td>
<td></td>
</tr>
</tbody>
</table>

Source: CHMI
1. State of Surface Water and Groundwater

1.2.3 Comparison of average annual concentrations of mercury (82/176/EU) in water in 2002 with quality targets of the EU

Source: CHMI

1.2.4 Comparison of average annual concentrations of hexachlorobenzene (86/280/EU) in water in 2002 with quality targets of the EU

Source: CHMI
waste water treatment plants and by the halting or limiting of production on the part of many industrial enterprises and a reduction in the use of fertilisers in agricultural production.

Despite the improvement attained, it is not possible to consider the current state as being wholly satisfactory. Those sections of rivers with lower water states and with a heavy accumulation of pollution sources remain problematic in particular. The worst water quality was recorded in the Bílina; this small watercourse was mainly affected by the industrial source Chemopetrol, a. s. and Litvínov a Spolek pro chemickou a hutní výrobu, a. s., Ústí nad Labem (Spolchemie). It is possible to anticipate an improvement in water quality in the Bílina in the section before the mouth into the Elbe, because in the 4th quarter of 2002 the waste water from Spolek pro chemickou a hutní výrobu was connected to the municipal WWTP in Ústí nad Labem.

After the August floods there was a temporary worsening of the state of microbiological burden in the affected rivers, especially downstream of the temporarily out of action WWTPs.

Microbial pollution of rivers is a significant factor, especially when treating surface water to make it potable and when using surface water for swimming. In cooperation with the Ministry of the Environment, the Ministry of Health has prepared a draft decree for section 34 of the Water Act (Act No. 254/2001 Coll.) which designates surface water for swimming; these are usually localities at reservoirs or recreational fishponds. The monitoring of microbiological pollution has a fundamental significance for abstractions of water for water management, of which the following are most significant on free watercourses: Úhlava – Doudlevce (Plzeň), Ižera – Předměřice (Káraný) and Vltava – Podolí (Prague).

Work continued on the implementation of many measures to eliminate especially dangerous substances on significant watercourses.

The following in particular are considered to be the most important in this group of substances: organohalogens and other compounds, mercury, cadmium, nickel and lead.

For pollution characterised by the summary indicator AOX (absorbable organic halogens), the target emission standard (appendix 3 of Government Order No. 61/2002 Coll.) is 30 mg.l⁻¹. In the Bílina at the mouth to the Elbe, Olše and Ostravice, in the year 2002 values for the concentration of AOX running into hundreds of mg.l⁻¹ were found. In the Odra before the state border, in the Elbe from Pardubice to the state border and in other watercourses (primarily in the Nis, Svratka, Jihlava and Dyje) in the year 2002 values for AOX concentrations above the emission standard were found.

In the course of the flood in August 2002, short-term increased values for AOX were detected in the Elbe as a result of an accidental spill of chlorine from Spolana Nera-tovice. Chlorinated organic substances (1,2-dichlorethane, trichlormethane, trichlorethene, tetrachlorethene and hexachlorobenzene) come primarily from the chemical industry releasing waste water into the Bílina or directly into the Elbe or the burden comes from older burdening.

Polychlorinated biphenyls (referred to hereinafter as “PCB”) and dichlorodiphenyl-trichloroethane (referred to hereinafter as “DDT”) also come from earlier burden on the environment. Their monitoring continued to a great extent in the formerly identified sections of rivers. PCBs are a problem in the Elbe downstream from Pardubice and in the Olšava (Uherský Brod) and the Morava. DDT contamination at the mouth of the Bílina is caused by polluted soils from the complex of Spolek pro chemickou a hutní výrobu, a. s. in Ústí nad Labem.

### Table 1.2.1 Number of monitored profiles of the individual monitoring programmes of the AWMA in the individual areas of the basin

<table>
<thead>
<tr>
<th>Area of basin</th>
<th>CHMI</th>
<th>POINT</th>
<th>SR</th>
<th>NIT</th>
<th>BIO</th>
<th>SED</th>
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<tbody>
<tr>
<td>Elbe</td>
<td>11</td>
<td>62</td>
<td>21</td>
<td>157</td>
<td>73</td>
<td>32</td>
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<tr>
<td>Vltava</td>
<td>33</td>
<td>93</td>
<td>13</td>
<td>241</td>
<td>126</td>
<td>46</td>
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<tr>
<td>Ohře</td>
<td>4</td>
<td>25</td>
<td>7</td>
<td>57</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>Odra</td>
<td>5</td>
<td>19</td>
<td>6</td>
<td>39</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Morava</td>
<td>16</td>
<td>41</td>
<td>30</td>
<td>146</td>
<td>57</td>
<td>46</td>
</tr>
<tr>
<td>Total AWMA</td>
<td>69</td>
<td>240</td>
<td>77</td>
<td>640</td>
<td>309</td>
<td>146</td>
</tr>
</tbody>
</table>

Source: AWMA
Pollution with polyaromatic hydrocarbons (PAH), of which fluoranthene and benz(a)pyrene may be considered the most important, come from coal mining, the coking industry, certain types of production (such as the impregnation of wood with creosote oil (sleepers, posts) and motor traffic. The most serious burden of a watercourse with these substances was discovered in the Úhlava and Jizera (water-management abstractions), in the Elbe before the state border and in the Odra before the state border.

The content of mercury in the Bílina, which in the past was wholly unsatisfactory in the lower part, has dropped significantly in recent years as a result of the implementation of measures in Spolek pro chemic-kou a hutní v˘robu, a. s. Ústí nad Labem (Spolchemie). An increased concentration of cadmium was ascertained in the Ostrava region in the Ol‰e and in the Ostravice and Odra, and it comes primarily from industrial sources of the Ostrava agglomeration. In the Litavka the cadmium pollution comes primarily from older burden, mine water and the metallurgical industry.

In 2002 radioactive substances were monitored in 81 profiles of the state network in the indicators of overall volume alpha activity, overall volume beta activity, overall volume beta activity after correction "K", volume activity of radium 226 and concentration of natural radium. For the evaluation of changes in the content of radioactive substances in surface waters for the period 1990 – 2002 it is possible to state that in the course of this period there was a significant improvement in the quality of water and of the other elements of the environment, especially in the basin of the Ploučnice, and at the end of the evaluation period also in the basins of the Mže, the Příbram stream, and the Litávka and in the Loučka.

Eutrophication of surface water in reservoirs remains a serious problem.

This involves an increased content of mineral nutrients, principally compounds of phosphorous and nitrogen in water in connection with water temperature. There were great problems with water quality in the summer in many water-management reservoirs, and there was a slight worsening in the period of the August floods, when tributaries contained a significant amount of organic substances which were washed into reservoirs. In some reservoirs there was a significant incidence of blue-green algae. In an overall evaluation it is possible to note that the worsened state of quality was managed, suppliers of water for citizens were not affected, and there was only a significant restriction of water recreation.

The quality of surface water is monitored not only in significant watercourses but also on small ones as part of the monitoring of the Agricultural Water-Management Administration.

The monitoring of surface water of the Agricultural Water-Management Administration (referred to hereinafter as the “AWMA”) takes place throughout the entire Czech Republic. In 2002 it was carried out on the basis of the monitoring networks of six monitoring programmes.

The profiles on minor watercourses were monitored in the monitoring for the state network of water quality of CHMI and the monitoring of significant point sources of pollution (POINT). The new monitoring activities were the monitoring of nitrates for the purposes of the directive of the Council 91/676/EEC (NIT) and hydrobiological monitoring (BIO), which was carried out on the monitoring profiles of the programmes of CHMI and BOD. The selected profiles of selected reservoirs were monitored in the programme monitoring of small reservoirs (SR). Monitoring of the chemical state of sediments (SED) included monitoring programmes of CHMI and SR.

In the samples of water taken from the relevant profiles, 43 indicators were design-
The quality of groundwater has not changed significantly in recent years. In comparison with 2001 it is possible to state that there was a slight improvement in the shallow wells, whereas there was a slight deterioration in the group of deep wells and springs.

In 2002, in the state monitoring network of groundwater quality, 461 subjects were monitored consisting of 137 springs, 146 shallow wells and 178 deep wells. From the exceeding of standards A, B and C (according to the methodological instruction of the ME from 15.9.1996 part 2 – Criteria of pollution of soil and groundwater) it is evident that 15 indicators exceeded standard C at least once last year, and the highest percentage of exceeding was recorded in indicators for chloride, aluminium and ammonium ions. There are less frequent cases of exceeding for benzo(k)fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene, atrazine, cis-1,2-dichlorethene. For other indicators there was merely a sporadic exceeding of standard C. Values measured above limit B and below limit C were ascertained for 10 substances, primarily for toluene and boron, and there was also an incidence of tetrachlormethane, 1,1,2-trichlorethane, pentachlorbenzene, cadmium, ethylbenzene and m-xylene. The exceeding of standards B and C is most frequent in the groundwater of shallow wells oriented towards alluvial rivers (most heavily influenced by anthropogenic activity).

From the aspect of comparing the quality indicators of groundwater with requirements for drinking water, in the above-limit values the most frequently ascertained pollution was in indicators of the chemical consumption of oxygen by dichromate, nitrates, chemical consumption of oxygen by permanganate, ammonium ions, chlorides and aluminium. There were less frequent cases of exceeding in indicators for humic substances, phenols escaping with water vapour, fluoranthene, benzo(a)pyrene, pyrene, nickel and atrazine. All of these substances are represented in the groundwater of shallow wells to a greater extent.
2. WATER BALANCE ASSESSMENT HANDLING WATER

2.1 Abstractions of surface water

The overall long-term fall in abstractions of surface water came to a halt in 2002, and in comparison with the year 2001 there was an increase of 4.5%.

In the year 2002, 825 abstractions of surface water were recorded from watercourses and reservoirs with an abstraction of 1,368 million m$^3$. These were abstractions above 6,000 m$^3$ per year or 500 m$^3$ per month. As a result of the integration of data from the individual river board corporations, the transfers of water in the Elbe River Board are not included, which came to 47 million m$^3$ in 2002, neither were the abstractions for the complexes of fishponds under the Odra River Board in the amount of 18.8 million m$^3$. The structure of recorded abstractions in the year 2002 is given in table 2.1.1.

Overall abstractions of surface water in 2002 were higher by 4.5% in comparison with the previous year (2001) for the first time since 1990. There was a significant increase in the category of abstractions for the energy sector caused by the increase in abstraction for through-flow cooling of the condensers of the steam turbines in the Opatovice power station of 98.8 million m$^3$. In the category of abstractions for agriculture there was an increase by 65.2%. The category of abstractions for water supply systems was virtually stagnant. There was a decrease in the category of abstractions for other users and industry. With reference to the changes mentioned, it should be noted that in the years 1998 – 2001, the generation of heat was included in the category of industry (according to the OECD), whereas up to 1998 and now in 2002 it is included in the energy sector category.

Table 2.1.1 Abstractions of surface water in 2002 in millions of m$^3$

<table>
<thead>
<tr>
<th>River Board Corp.</th>
<th>Water supply systems</th>
<th>Agriculture</th>
<th>Electricity generation</th>
<th>Industry</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Number</td>
<td>Amount</td>
<td>Number</td>
<td>Amount</td>
<td>Number</td>
</tr>
<tr>
<td>Elbe</td>
<td>42.2</td>
<td>31</td>
<td>6.3</td>
<td>34</td>
<td>409.9</td>
<td>12</td>
</tr>
<tr>
<td>Vltava</td>
<td>171.4</td>
<td>53</td>
<td>0.3</td>
<td>10</td>
<td>38.7</td>
<td>14</td>
</tr>
<tr>
<td>Ohře</td>
<td>57.9</td>
<td>29</td>
<td>0.2</td>
<td>12</td>
<td>55.7</td>
<td>7</td>
</tr>
<tr>
<td>Odra</td>
<td>77.3</td>
<td>17</td>
<td>0.0</td>
<td>3</td>
<td>10.8</td>
<td>8</td>
</tr>
<tr>
<td>Morava</td>
<td>47.0</td>
<td>41</td>
<td>4.5</td>
<td>20</td>
<td>104.6</td>
<td>13</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>395.8</td>
<td>171</td>
<td>11.3</td>
<td>79</td>
<td>619.7</td>
<td>54</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M., River Board Corps.
2.2 Abstractions of groundwater

Abstractions of groundwater in 2002 decreased by 2.3% in comparison with the year 2001.

In 2002 there were 3,145 recorded abstractions of groundwater in an amount of 423.9 million m³. These were abstractions greater than 6,000 m³ a year or 500 m³ a month. Out of the total number, 918 abstractions were less than 15,000 m³.

The structure of the recorded abstractions of water in the individual river board areas in 2002 is given in Table 2.2.1.

Abstractions in the category of water supply systems for public use accounted for 86.9% of total abstractions of groundwater. Total abstractions of groundwater reduced in comparison with 2001 by 2.3%. There was an increase in consumptions in all categories, with the exception of abstractions of water supply systems for public need, where there was a reduction in abstractions by 3.6%.

The overall development of abstractions of groundwater since 1980 is given in Graph 2.2.1.

Table 2.2.1 Abstractions of groundwater in 2002 in millions m³

<table>
<thead>
<tr>
<th>River Board corp.</th>
<th>Water supply systems</th>
<th>Agriculture</th>
<th>Electricity generation</th>
<th>Industry</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Number</td>
<td>Amount</td>
<td>Number</td>
<td>Amount</td>
<td>Number</td>
</tr>
<tr>
<td>Elbe</td>
<td>115.1</td>
<td>569</td>
<td>1.5</td>
<td>88</td>
<td>0.8</td>
<td>5</td>
</tr>
<tr>
<td>Vltava</td>
<td>37.2</td>
<td>517</td>
<td>2.2</td>
<td>128</td>
<td>0.9</td>
<td>1</td>
</tr>
<tr>
<td>Ohře</td>
<td>85.0</td>
<td>369</td>
<td>0.4</td>
<td>12</td>
<td>0.7</td>
<td>3</td>
</tr>
<tr>
<td>Odra</td>
<td>24.5</td>
<td>125</td>
<td>0.5</td>
<td>26</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>Morava</td>
<td>126.6</td>
<td>492</td>
<td>2.7</td>
<td>134</td>
<td>0.1</td>
<td>5</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>388.4</td>
<td>2072</td>
<td>7.3</td>
<td>386</td>
<td>1.6</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M. from data of River Board corps.
The volume of discharged waste and mine water increased by 5.8% in comparison with 2001.

In the year 2002, 3,183 discharges of waste and mine water into surface water were recorded with a volume of 1,886.9 million m$^3$. This involves sources in excess of 6,000 m$^3$ per year or 500 m$^3$ per month. As a result of the unification of the data from the individual river board corporations, transfers of water in the Ohře River Board Corp. are not included, which in 2002 amounted to 5 million m$^3$, nor is the emptying from the fishpond complex in the Odra river board area, which came to 4.4 million m$^3$.

The year-on-year increase was 5.8%. There was an increase in all categories of use with the exception of discharges from industry. The greatest increase, influenced by the increase discharge of cooling water from the power station Opatovice by 99 million m$^3$, was recorded in the category of the energy sector. With reference to the changes shown, it is necessary to note that in the years 1998 - 2001 the generation of heat was included in the category industry (according to the OECD), whereas up to 1998 and now in the year 2002 it is included in the category of the energy sector. There was an increase in the category of public sewer systems by 2.3%.

The structure of the recorded discharges in the individual river board regions in 2002 is given in Table 2.3.1. The overall development of discharged water since 1980 is shown by Graph 2.3.1.
3.

ADMINISTRATION OF WATERCOURSES

3.1 Professional administration of watercourses

- With effect from the start of 2002, the scope of professional administration of significant watercourses is designated by the new decree of the MA No. 470/2001 Coll., which designates a list of important watercourses and the method of carrying out activities associated with the administration of watercourses.

The decree designates the basic terms, care for the channels of watercourses and the waterworks themselves, the activities of administrators of watercourses during the creation of conditions enabling the authorised handling of water associated with the watercourse and their cooperation during the liquidation of accidents on watercourses. It also deals with the content of applications for the designation of administrators of small watercourses, and in appendix No. 1 of the decree referred to a full list of significant watercourses is given.

The decisive administrators of watercourses are the river board corporations, AWMA and Forests of the CR, s.e. in the competence of the MA, which ensure the administration of approximately 94% of the length of watercourses in the Czech Republic. Municipalities, regional military offices of military districts and the administrations of national parks administer approximately 6% of watercourses.

As a result of changes in the definition of significant watercourses, some watercourses were excluded and transferred from the administration of the river board corporations to the administration of AWMA. In addition, certain spring segments and border watercourses originally recorded as small watercourses were classified as significant watercourses. These changes are documented according to the individual managers of watercourses in Table 3.1.1.

- Book values of tangible assets related to watercourses reached a value of almost CZK 44 billion in 2002.

In the year 2002 no water structure was completed, received official post-construction approval for use and was put into use by any administrator of watercourses which would significantly influence indicators expressing the book values of tangible fixed assets. The year-on-year increase expresses primarily increments in tangible fixed assets (referred to hereinafter as “TFA”) gained by renewal and planned development in the field of entrusted assets in the form of regular investment construction and the ongoing incorporation of acquired assets and completed water structures. For example, the Vltava River Board corporation planned to put the small hydroelectric station Svanice into operation with acquisition costs in

---

Table 3.1.1 Professional administration of watercourses

<table>
<thead>
<tr>
<th>Category</th>
<th>Administrator</th>
<th>Length of watercourses in km</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2001</td>
</tr>
<tr>
<td>Watercourses important for water management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>3 712.70</td>
<td>3 380.80</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>4 779.30</td>
<td>4 775.60</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>1 981.00</td>
<td>2 299.57</td>
</tr>
<tr>
<td>Total competence of MA</td>
<td>15 421.30</td>
<td>15 390.63</td>
</tr>
<tr>
<td>Small watercourses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Water Management Administration</td>
<td>35 374.90</td>
<td>35 090.00</td>
</tr>
<tr>
<td>Forests of the CR, s.e.</td>
<td>19 029.30</td>
<td>19 370.00</td>
</tr>
<tr>
<td>Total river board corporations</td>
<td>1 835.30</td>
<td>1 595.68</td>
</tr>
<tr>
<td>Total competence of MA</td>
<td>56 838.50</td>
<td>56 053.68</td>
</tr>
<tr>
<td>Other</td>
<td>3 740.20</td>
<td>4 555.69</td>
</tr>
<tr>
<td>Total</td>
<td>60 578.70</td>
<td>60 609.37</td>
</tr>
<tr>
<td>Total watercourses</td>
<td>76 000.00</td>
<td>76 000.00</td>
</tr>
</tbody>
</table>

Source: MA

1) Includes administrations of National Parks, offices of military areas, municipalities and other legal persons (for example, mines)
excess of CZK 55 million. But after the August floods the state of the equipment required relatively extensive repair, which was not complete by the end of the year, and as a result of this it was not put into operation. In 2002 the retirement of certain assets destroyed by the floods represented a significant movement in TFA. The specific values of TFA in acquisition prices for the individual administrators of watercourses with year-on-year development (increments in TFA) are given in Table 3.1.2.

In the year 2002, the MA, performing the function of founder on behalf of the state, issued Deeds of Foundation and Statutes of all the river board corporations, and the second phase of the transformation of AWMA was carried out.

The administration of important and designated small watercourses is performed by the river board corporations, which for the second year are operating on the basis of Act No. 305/2000 Coll. as state enterprises after transformation from joint-stock companies.

The MA, performing on behalf of the state the function of founder of the river board corporations according to the provisions of section 1, paragraph 4 of Act No. 305/2000 Coll., concerning River Boards, and pursuant to section 4, paragraph 1 of Act No. 77/1997 Coll., concerning State Enterprises, as subsequently amended, issued the Deeds of Foundation of the river board corporations of the Elbe, Vltava, Ohře, Morava and Odra. And pursuant to the provisions of section 1, paragraph 4 of Act No. 305/2000 Coll., Concerning River Boards, and pursuant to section 3, paragraph 1 of Act No. 77/1997 Coll., Concerning State Enterprises, as subsequently amended, issued pursuant to section 15, letter f) of the State Enterprises Act they were also the founder of the statutes of these five professional administrators of watercourses. A methodological instruction was issued for the submission and circulation of documents and documentation in the context of handling designated assets of the state which the river board corporations have a right to manage.

During 2002, the second phase of transformation of AWMA occurred. It focussed on the change in internal territorial and organisational configuration of the organisation and also on the regulation and expansion of services ensured during the administration of information and in the actual performance of administration of watercourses and water structures. There was a transformation of the former seven offices of AWMA to five AWMAs – areas or river basins. IT activity was reinforced both in relation to the administered assets and to the actual activity of the organisation expanded to include a new section for IT and management systems. At the level of regional administration, the divisions were transferred into independent departments in order to ensure linkage in direct management of activity from the headquarters to the executive employees in the field.

For the unification of the procedure when submitting applications for requesting consent of the founder for handling the assets of the Czech Republic, the MA issued a methodological instruction for the AWMA for the submission of documents when handling state assets, i.e., land, buildings and appurtenances which the AWMA is competent to manage.

The regulation of mountain streams and forestry-technological land reclamation are activities carried out with the aim of the harmless conducting away of flood flows and increasing the resilience of the administered land to the erosive effects of water. This activity, which is a part of state forestry policy, is carried on according to the Forestry Act in the public interest. In the year 2002 it was ensured by six Area Administrations of watercourses in Frýdek-Místek, Brno, Hradec Králové, Benešov, Plzeň and Teplice. A total of 61 employees worked in them caring for tangible assets with a book value of CZK 2.17 billion.

The supervision activity of the individual river board corporations and the state enterprise Forests of the CR is performed via supervisory boards established and operating in the sense of Act No. 77/1997 Coll., Concerning State Enterprises, as subsequently amended.

In the year 2002, many comprehensive and tightly focussed inspections were carried out at river board corporations and the AWMA:

- In the year 2002 the Supreme Audit Office carried out an audit of all river board corporations focussing on “Management of State Assets”. No faults were discovered in any case.
- The locally competent inland revenue offices carried out an income tax audit in the state enterprises Ohře River Board, Odra River Board and Morava River Board. In all cases there were no shortcomings.
- Prague Social Security Administration carried out an audit focussing on “Payments of Insurance Premiums and Performance of Duties in Pension Insurance”. The audit did not find any shortcomings.
- There is an ongoing audit by the Brno inland revenue office of the Morava River Board corp. “Justification of Use of Grant from 1999”.
- There was an audit of the Elbe River Board corp. by the Hradec Králové inland

### Table 3.1.2 Book value of tangible fixed assets related to watercourses in billions of CZK

<table>
<thead>
<tr>
<th>Administrators of water boards under supervision of MA</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>7.88</td>
<td>7.92</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>7.22</td>
<td>7.22</td>
</tr>
<tr>
<td>Ohře River Board corp.</td>
<td>7.16</td>
<td>7.22</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>6.60</td>
<td>6.66</td>
</tr>
<tr>
<td>Total River Board corporations</td>
<td>33.56</td>
<td>33.73</td>
</tr>
</tbody>
</table>

| AWMA | 7.59 | 7.83 |
| Forests of the CR, s.e. | 2.09 | 2.17 |
| **Total** | **43.24** | **43.73** |

Source: MA
The greatest part of the overall revenues of the River Board corporations in 2002 consisted of payments for abstractions of surface water, which remained the most important source of income for covering the costs for the administration of watercourses, in particular for ensuring the conditions for the requisite abstractions of water. Their share drops every year, and there is an attempt to make up for these falls with an increased growth in other revenues and yields. The grant element, primarily from the state budget, was significantly reinforced in view of the reconstruction of water-management assets following the disastrous floods.

The structure of revenues of River Board corporations in 2002 is expressed in Table 3.2.1 and Graph 3.2.1.

### Table 3.2.1 Structure of income of River Board corporations in 2002 in thousands of CZK

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments for abstractions of surface water</td>
<td>565 890</td>
<td>437 818</td>
<td>398 854</td>
<td>346 509</td>
<td>299 959</td>
<td>2 049 030</td>
</tr>
<tr>
<td>Electricity generation</td>
<td>15 107</td>
<td>49 992</td>
<td>161 747</td>
<td>41 604</td>
<td>21 604</td>
<td>290 054</td>
</tr>
<tr>
<td>Income from use of water storage (heading-up) facilities</td>
<td>15 342</td>
<td>104 184</td>
<td>5 323</td>
<td>0</td>
<td>10 902</td>
<td>135 751</td>
</tr>
<tr>
<td>Other income</td>
<td>173 429</td>
<td>191 389</td>
<td>65 606</td>
<td>47 853</td>
<td>44 975</td>
<td>523 252</td>
</tr>
<tr>
<td>Grants from state budget</td>
<td>106 962</td>
<td>140 691</td>
<td>2 986</td>
<td>81 218</td>
<td>254 788</td>
<td>586 645</td>
</tr>
<tr>
<td>Other operating grants</td>
<td>5 452</td>
<td>294</td>
<td>0</td>
<td>2 935</td>
<td>4 562</td>
<td>13 243</td>
</tr>
<tr>
<td><strong>Total River Board corporations</strong></td>
<td><strong>882 202</strong></td>
<td><strong>924 368</strong></td>
<td><strong>634 496</strong></td>
<td><strong>520 119</strong></td>
<td><strong>636 790</strong></td>
<td><strong>3 597 975</strong></td>
</tr>
</tbody>
</table>

Source: ME, River Board corporations
The sum of yields for deliveries of surface water last year rose by almost CZK 120 million.

The development of deliveries of surface water for a fee 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 are given in Table 3.2.5.

The prices of surface water increased by 10.5% in comparison with last year. These are materially regulated prices which can include only economically justifiable costs, reasonable profit and tax according to the relevant tax regulations.

These prices in the current interpretation do not express the value of surface water, but the price for the service – i.e., allowing supplies which are ensured by the River Board corporations for water users. These calculated prices are subject to regulation in the form of material regulation according to the Prices Act and according to the rules of Assessments issued by the Ministry of Finance in the Price Bulletin every year.

### Table 3.2.2 Supplies of surface water for a fee in the years 1995 - 2002 in thousands of m³

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>887,994</td>
<td>863,372</td>
<td>897,063</td>
<td>787,331</td>
<td>572,341</td>
<td>534,300</td>
<td>508,435</td>
<td>571,365</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>394,582</td>
<td>382,786</td>
<td>355,799</td>
<td>324,336</td>
<td>294,550</td>
<td>276,726</td>
<td>264,402</td>
<td>266,916</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>267,135</td>
<td>250,796</td>
<td>232,545</td>
<td>207,949</td>
<td>192,786</td>
<td>180,072</td>
<td>171,924</td>
<td>167,878</td>
</tr>
<tr>
<td>Total River Board corporations</td>
<td>1,950,359</td>
<td>1,903,577</td>
<td>1,884,521</td>
<td>1,689,486</td>
<td>1,396,384</td>
<td>1,304,894</td>
<td>1,316,014</td>
<td></td>
</tr>
</tbody>
</table>

Source: River Board corporations
Note: a) total for fee, b) of this for water supply system for public need.

### Table 3.2.3 Price for abstractions for flow cooling in the years 1993 - 2002 in CZK/m³

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>0.35</td>
<td>0.62</td>
<td>0.75</td>
<td>0.83</td>
<td>0.99</td>
<td>1.16</td>
<td>1.39</td>
<td>1.54</td>
<td>1.71</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>0.58</td>
<td>0.88</td>
<td>0.91</td>
<td>0.95</td>
<td>1.03</td>
<td>1.15</td>
<td>1.41</td>
<td>1.55</td>
<td>1.65</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>0.94</td>
<td>1.21</td>
<td>1.31</td>
<td>1.43</td>
<td>1.52</td>
<td>1.67</td>
<td>1.87</td>
<td>1.99</td>
<td>2.11</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0.67</td>
<td>0.79</td>
<td>0.82</td>
<td>0.85</td>
<td>0.88</td>
<td>1.00</td>
<td>1.11</td>
<td>1.18</td>
<td>1.30</td>
</tr>
<tr>
<td>Total River Board corporations</td>
<td>0.48</td>
<td>0.48</td>
<td>0.49</td>
<td>0.50</td>
<td>0.52</td>
<td>0.54</td>
<td>0.57</td>
<td>0.58</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Source: River Board corporations, VÚV T.G.M.
Note: The unit price for 1m³ is given without value added tax.

### Table 3.2.4 Price for other abstractions of surface water in the years 1993 - 2002 in CZK/m³

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>0.35</td>
<td>0.62</td>
<td>0.75</td>
<td>0.83</td>
<td>0.99</td>
<td>1.16</td>
<td>1.39</td>
<td>1.54</td>
<td>1.71</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>0.58</td>
<td>0.88</td>
<td>0.91</td>
<td>0.95</td>
<td>1.03</td>
<td>1.15</td>
<td>1.41</td>
<td>1.55</td>
<td>1.65</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>0.94</td>
<td>1.21</td>
<td>1.31</td>
<td>1.43</td>
<td>1.52</td>
<td>1.67</td>
<td>1.87</td>
<td>1.99</td>
<td>2.11</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0.67</td>
<td>0.79</td>
<td>0.82</td>
<td>0.85</td>
<td>0.88</td>
<td>1.00</td>
<td>1.11</td>
<td>1.18</td>
<td>1.30</td>
</tr>
<tr>
<td>Total River Board corporations</td>
<td>0.48</td>
<td>0.48</td>
<td>0.49</td>
<td>0.50</td>
<td>0.52</td>
<td>0.54</td>
<td>0.57</td>
<td>0.58</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Source: River Board corporations, VÚV T.G.M.
Note: The unit price for 1m³ is given without value added tax.

### Table 3.2.5 Payments for abstractions of surface water in the years 1993 - 2002 in CZK million

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>173</td>
<td>363</td>
<td>419</td>
<td>448</td>
<td>548</td>
<td>556</td>
<td>530</td>
<td>532</td>
<td>536</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>237</td>
<td>331</td>
<td>332</td>
<td>337</td>
<td>345</td>
<td>357</td>
<td>383</td>
<td>401</td>
<td>408</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>245</td>
<td>293</td>
<td>288</td>
<td>323</td>
<td>343</td>
<td>368</td>
<td>375</td>
<td>367</td>
<td>397</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>131</td>
<td>170</td>
<td>195</td>
<td>221</td>
<td>255</td>
<td>273</td>
<td>279</td>
<td>294</td>
<td>301</td>
</tr>
<tr>
<td>Total River Board corporations</td>
<td>1 020</td>
<td>1 405</td>
<td>1 490</td>
<td>1 595</td>
<td>1 764</td>
<td>1 818</td>
<td>1 833</td>
<td>1 871</td>
<td>1 929</td>
</tr>
</tbody>
</table>

Source: River Board corporations
The significant year-on-year growth in revenues for electrical energy from own small hydroelectric plants came to CZK 88 million last year, and overall revenues of CZK 290 million helped overcome the downturn in other revenues and also helped to cover many extraordinary costs caused by the floods.

In the year 2002 these revenues reached their maximum – more than CZK 290 million. The river board with the greatest revenue was the Ohře River Board Corporation, which operates 20 small hydroelectric plants. More detailed information about the overall number of own small hydroelectric plants, their installed capacity, generation of electricity and revenues is given in Table 3.2.6.

Other revenues of River Board corporations are less significant and cover the area of the leasing of land, non-residential premises and water surfaces, and other entrepreneurial activities, the most significant of which are revenues from the operation of machines and road transport, the operation of laboratories, and project and engineering activity and also financial yields.

In the year 2002, the year-on-year fall of these other revenues from the year 2001 was halted, and indeed there was significant growth. This primarily involved an increased need for financial resources associated with the rectification of flood damages, and the unfavourable situation in the field of yields was compensated in some cases by financial revenues and yields from the sale of assets.

Overall income, i.e., total yields for the operations of River Board corporations, including financial incomes and increased grants, displayed a growth of almost 18% in 2002. The level of the other revenues is given in Table 3.2.7.

The annual grants represent significant support for the financing of needs as part of the main activities of the River Board corporations. Without state grants, the consequences of the floods and the most important securing work could not have been rectified as quickly in 2002 in particular. Table 3.2.8 shows the overall operational (non-investment) and investment grants of the individual River Board corporations allocated in the year 2002. Amongst the other sources contributing towards grants in particular were the MA, SFDI, ME via the funds of PHARE and Ostrava-Karviná Mines for the rectification of mine damage, and contributions to flood prevention measures also came from some regional authorities.

The significant year-on-year increase in grants reflects the need for the renewal of watercourses after the floods of the year...
1997, 1998, 2000, and in particular the most urgent cases of rectification and liquidation of flood damage after the August floods of 2002. For the Elbe River Board corp. and the Vltava River Board corp., the contribution for operations and maintenance of watercourses constitutes a fundamental part of the operational grants, and the contribution for the building of watercourses constitutes a fundamental part of the investment grants.

The year-on-year growth in costs by almost 22% interrupted a drop in costs truly expended which had lasted for several years. This significant growth is the result of an attempt to secure the operation and safety of water structures as soon as possible after the floods of 2002 and to minimise the damages to assets of water-management organisations.

There was an increase in costs in particular as a result of increased costs for repairs and maintenance, increased consumption of material and also the settlement of flood damages. The costs item for repairs grew for the total of River Board corporations by more than 50%. The organisations where the floods did most damage contributed the most to this increase – for example the year-on-year increase was more than tripled for Vltava River Board corp. An overview of costs of the River Board corporations in the year 2002 and their comparison with the previous year is given in Table 3.2.9.

Last year the River Board corporations expended CZK 1424 million on the implementation of investments, of which CZK 694.3 million was drawn from own sources, and in addition a total of CZK 729.7 million of investment resources not covered by own means was used.

In the course of the last nine years, the River Board corporations have spent CZK 10,066 million of financial resources on investments, as is shown in Table 3.2.10 and Graph 3.2.2. The year-on-year increase by more than 27% reflects the necessity of immediately dealing with the consequences of last year’s catastrophic floods and also the fact that the SFDI provided significant investment resources for the development of the Elbe watercourse which were invested last year.

<table>
<thead>
<tr>
<th>Type of costs</th>
<th>Elbe Board corp.</th>
<th>Vltava Board corp.</th>
<th>Ohře Board corp.</th>
<th>Údra Board corp.</th>
<th>Morava Board corp.</th>
<th>Total River Board corporations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciations</td>
<td>2002 127.4</td>
<td>141.4</td>
<td>152.7</td>
<td>98.3</td>
<td>160.9</td>
<td>626.7</td>
</tr>
<tr>
<td></td>
<td>2001 131.5</td>
<td>142.9</td>
<td>157.4</td>
<td>70.2</td>
<td>167.7</td>
<td>608.7</td>
</tr>
<tr>
<td>Repairs</td>
<td>2002 215.9</td>
<td>471.8</td>
<td>122.8</td>
<td>133.7</td>
<td>211.7</td>
<td>1155.7</td>
</tr>
<tr>
<td></td>
<td>2001 172.5</td>
<td>145.4</td>
<td>105.0</td>
<td>187.0</td>
<td>158.7</td>
<td>766.6</td>
</tr>
<tr>
<td>Material</td>
<td>2002 48.0</td>
<td>22.4</td>
<td>23.3</td>
<td>33.4</td>
<td>31.7</td>
<td>158.4</td>
</tr>
<tr>
<td></td>
<td>2001 45.2</td>
<td>18.0</td>
<td>21.6</td>
<td>28.9</td>
<td>36.7</td>
<td>150.4</td>
</tr>
<tr>
<td>Energy</td>
<td>2002 28.2</td>
<td>23.7</td>
<td>24.5</td>
<td>4.4</td>
<td>9.4</td>
<td>80.2</td>
</tr>
<tr>
<td>and fuel</td>
<td>2001 28.0</td>
<td>23.1</td>
<td>27.5</td>
<td>4.2</td>
<td>9.2</td>
<td>82.0</td>
</tr>
<tr>
<td>Personnel</td>
<td>2002 277.8</td>
<td>241.9</td>
<td>190.9</td>
<td>129.2</td>
<td>195.1</td>
<td>1034.9</td>
</tr>
<tr>
<td>costs</td>
<td>2001 243.2</td>
<td>214.5</td>
<td>178.2</td>
<td>118.6</td>
<td>190.1</td>
<td>944.6</td>
</tr>
<tr>
<td>Services</td>
<td>2002 115.9</td>
<td>55.3</td>
<td>28.1</td>
<td>33.1</td>
<td>24.2</td>
<td>256.6</td>
</tr>
<tr>
<td></td>
<td>2001 95.0</td>
<td>53.6</td>
<td>29.1</td>
<td>33.7</td>
<td>22.6</td>
<td>234.0</td>
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<tr>
<td>Financial</td>
<td>2002 109</td>
<td>6.9</td>
<td>3.0</td>
<td>5.1</td>
<td>9.4</td>
<td>26.3</td>
</tr>
<tr>
<td>costs</td>
<td>2001 2.5</td>
<td>6.4</td>
<td>0.6</td>
<td>5.3</td>
<td>0.5</td>
<td>15.3</td>
</tr>
<tr>
<td>Other</td>
<td>2002 61.7</td>
<td>6.7</td>
<td>78.9</td>
<td>59.9</td>
<td>23.9</td>
<td>231.1</td>
</tr>
<tr>
<td>costs</td>
<td>2001 29.0</td>
<td>36.1</td>
<td>20.8</td>
<td>24.8</td>
<td>17.6</td>
<td>124.3</td>
</tr>
<tr>
<td>Total</td>
<td>2002 877.4</td>
<td>969.9</td>
<td>623.2</td>
<td>497.1</td>
<td>612.3</td>
<td>3579.9</td>
</tr>
<tr>
<td>costs</td>
<td>2001 742.9</td>
<td>640.6</td>
<td>540.2</td>
<td>472.7</td>
<td>542.1</td>
<td>2937.9</td>
</tr>
</tbody>
</table>

Source: River Board corporations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>87.0</td>
<td>110.1</td>
<td>193.0</td>
<td>216.8</td>
<td>313.4</td>
<td>248.4</td>
<td>328.5</td>
<td>347.1</td>
<td>529.1</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>85.0</td>
<td>203.2</td>
<td>216.4</td>
<td>235.2</td>
<td>115.7</td>
<td>116.3</td>
<td>116.3</td>
<td>111.5</td>
<td>119.3</td>
</tr>
<tr>
<td>Ohře River Board corp.</td>
<td>116.0</td>
<td>122.0</td>
<td>225.0</td>
<td>200.0</td>
<td>180.2</td>
<td>212.5</td>
<td>148.2</td>
<td>173.4</td>
<td>218.2</td>
</tr>
<tr>
<td>Údra River Board corp.</td>
<td>44.7</td>
<td>289.1</td>
<td>340.2</td>
<td>314.3</td>
<td>279.1</td>
<td>484.4</td>
<td>361.6</td>
<td>226.8</td>
<td>282.3</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>111.0</td>
<td>94.0</td>
<td>95.5</td>
<td>236.1</td>
<td>311.0</td>
<td>357.3</td>
<td>356.8</td>
<td>257.8</td>
<td>200.5</td>
</tr>
<tr>
<td>Total river board corporations</td>
<td>443.7</td>
<td>818.5</td>
<td>1 089.8</td>
<td>1 202.4</td>
<td>1 199.4</td>
<td>1 418.9</td>
<td>1 310.3</td>
<td>1 199.2</td>
<td>1 428.0</td>
</tr>
</tbody>
</table>

Source: ME, River Board corporations

Graph 3.2.2 Development of investment construction of River Board corporations

Source: MA, River Board corporations

Table 3.2.9 Costs of River Boards in millions of CZK

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>87.0</td>
<td>110.1</td>
<td>193.0</td>
<td>216.8</td>
<td>313.4</td>
<td>248.4</td>
<td>328.5</td>
<td>347.1</td>
<td>529.1</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>85.0</td>
<td>203.2</td>
<td>216.4</td>
<td>235.2</td>
<td>115.7</td>
<td>116.3</td>
<td>116.3</td>
<td>111.5</td>
<td>119.3</td>
</tr>
<tr>
<td>Ohře River Board corp.</td>
<td>116.0</td>
<td>122.0</td>
<td>225.0</td>
<td>200.0</td>
<td>180.2</td>
<td>212.5</td>
<td>148.2</td>
<td>173.4</td>
<td>218.2</td>
</tr>
<tr>
<td>Údra River Board corp.</td>
<td>44.7</td>
<td>289.1</td>
<td>340.2</td>
<td>314.3</td>
<td>279.1</td>
<td>484.4</td>
<td>361.6</td>
<td>226.8</td>
<td>282.3</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>111.0</td>
<td>94.0</td>
<td>95.5</td>
<td>236.1</td>
<td>311.0</td>
<td>357.3</td>
<td>356.8</td>
<td>257.8</td>
<td>200.5</td>
</tr>
<tr>
<td>Total river board corporations</td>
<td>443.7</td>
<td>818.5</td>
<td>1 089.8</td>
<td>1 202.4</td>
<td>1 199.4</td>
<td>1 418.9</td>
<td>1 310.3</td>
<td>1 199.2</td>
<td>1 428.0</td>
</tr>
</tbody>
</table>

Source: ME, River Board corporations

Graph 3.2.2 Development of investment construction of River Board corporations

Source: MA, River Board corporations
Four of the River Board corporations recorded a total profit of CZK 63.6 million in 2002, and only the Vltava River Board corp. recorded a trading loss, this being in the total amount of CZK 45.5 million.

The share of the individual River Board corporations in the overall trading result and development in the generation of profit or loss for the Vltava River Board corporation is documented in Table 3.2.11. The division of profits achieved into individual funds and a proposal for the settlement of loss in the concrete River Board corporations is shown in Table 3.2.12.

The trading loss of the year 2002 for the Vltava River Board corporation was a pre-tax loss of CZK 66,368 thousand. For the period to the end of the year 2001, a tax liability was billed, as was an unsettled tax loss in the amount of CZK 87,440 thousand. A deferred tax receivable of the year 2002 in the amount of CZK 20,843 thousand was billed as a reduction of costs and also a reduction in the tax liability. After these adjustments, a trading loss of CZK 45,525 thousand was recorded for the fiscal period of 2002. According to a proposal, this loss should be settled by CZK 3,455 thousand from the reserve fund and CZK 42,070 thousand from other capital funds.

In contrast with previous years, when there was a year-on-year drop, the average calculated number of employees in the River Board corporations in 2002 increased by 12 employees to a figure of 3,544 persons compared with the previous year.

In 2002 the overall year-on-year increase in employees was 12. The situation with the development of labour is illustrated by Table 3.2.13, from which it is evident that the greatest increase in the overall number was for the Elbe River Board corp., whereas there was a drop of five employees at the Ohře River Board corp.

Average monthly salaries in River Board corporations were CZK 17,724 in the year 2002, see Table 3.2.14, and displayed a year-on-year increase of 8.1% in 2002.

<table>
<thead>
<tr>
<th>River Board corporation</th>
<th>Profit</th>
<th>Reserve fund</th>
<th>FKSP fund</th>
<th>Investment</th>
<th>Social fund</th>
<th>Bonus fund</th>
<th>Unsettled loss from previous years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>4,774</td>
<td>477</td>
<td>2,207</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>-45,525</td>
<td>-3,455</td>
<td>0</td>
<td>42,070</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ohře River Board corp.</td>
<td>11,534</td>
<td>3,267</td>
<td>3,500</td>
<td>3,567</td>
<td>0</td>
<td>2,000</td>
<td>0</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>23,992</td>
<td>3,300</td>
<td>2,818</td>
<td>14,534</td>
<td>3,350</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Morava River Board Corp.</td>
<td>24,912</td>
<td>5,519</td>
<td>3,500</td>
<td>0</td>
<td>2,500</td>
<td>12,993</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: MA

<table>
<thead>
<tr>
<th>River Board corporation</th>
<th>2002</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbe River Board corp.</td>
<td>838.5</td>
<td>928.8</td>
</tr>
<tr>
<td>Vltava River Board corp.</td>
<td>784.0</td>
<td>782.0</td>
</tr>
<tr>
<td>Ohře River Board corp.</td>
<td>623.0</td>
<td>628.0</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>460.0</td>
<td>455.0</td>
</tr>
<tr>
<td>Morava River Board Corp.</td>
<td>740.4</td>
<td>740.2</td>
</tr>
</tbody>
</table>

Source: River Board corporations

3.2.13 Number of employees (average calculated state)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Morava River Board Corp.</td>
<td>9.949</td>
<td>11.009</td>
<td>12.922</td>
<td>14.007</td>
<td>14.663</td>
<td>15.820</td>
<td>16.216</td>
</tr>
</tbody>
</table>

Source: River Board corporations

3.2.14 Average salaries in CZK achieved in the individual River Board corporations
Agricultural Water Management Administration

Last year’s flood affected virtually the entire territory of the river basins of the Vltava, the Berounka and lower Elbe and also the river basin of the Ohře, the Jízera, the Dyje and certain rivers draining the Czech-Moravian Highlands. Flood waves in watercourses culminated in the course of the first and second wave of rainfall at the level of a 100-year flood and higher. In many profiles, the highest ever historical water states and throughflows were recorded in watercourses.

On the basis of a field survey, the AWMA discovered damage at an estimated level of CZK 543.444 thousand at watercourses and reservoirs in its administration. The watercourses were damaged in the natural river bed sections and the artificially altered river bed sections. In many places structures and buildings were destroyed. Despite the fact that there was no case of a reservoir dike bursting, many of them were damaged. The most badly affected area in general and in the scope of AWMA was the area of the Vltava basin.

The character of the damages which AWMA recorded differs greatly and reflects the differences of the flood situations in various localities affected by the flood. In general it is possible to state that the upper sections of watercourses were affected primarily by the erosive effects of water and the objects washed away. Extensive damage to the structures on the watercourses was noted, there were changes to the routes of riverbed of watercourses, and there was extensive collapsing of riverbanks and destruction of vegetation on the riverbanks. The lower sections of flows with a shallow riverbed gradient were primarily affected by flooding. The flooding resulted in sedimentation from waste which caused heavy silting both in the riverbeds themselves and on the surrounding lands. A large amount of sediment was also noted in the reservoirs which AWMA administers in affected areas.

When carrying out repair work on damages caused by the August floods in 2002 it was necessary to ensure as a priority the repair of buildings and structures on watercourses which serve to ensure the functionality of the communication and engineering networks. It was also necessary to ensure the renewal of structures which ensure the stability and possibility of watercourses in the built-up areas of municipalities and cities and to ensure the stability and unobstructed nature of riverbeds and renewal of their flow capacity. In the case of reservoirs it is essential to remove silt.

The resources for the implementation of these remedial measures are covered in cooperation with the European Investment Bank via the programme 229 110 – Rectification of consequences of flood on state water-management assets or its sub-programme 229 113 – Rectification of consequences of flood damage caused by floods in August 2002. An overview of use of investment and non-investment expenses for the rectification of flood damage from 2000 and 2002 is shown in table 3.3.6.

In 2002 non-investment resources for maintenance, repairs and operation of watercourses in the amount of CZK 119.82 million were allocated to AWMA, as were CZK 9.4 million for the operation of watercourses and associated water structures. In addition non-investment financial resources were granted for flood prevention repairs of tangible fixed assets from programme 229 060 in the amount of CZK 10.00 million, from the Care for the Countryside Programme, in the amount of CZK 0.62 million, and for other non-investment expenses (other contributions, monitoring, ecological programme) CZK 18.80 million. A total of CZK 158.02 million was allocated to AWMA in 2002, of which CZK 156.79 million was used.

Out of the financial resources mentioned, the main part was used for maintenance and repair of watercourses (approximately 81%) and also for other non-investment expenses (approximately 12%).

A summarised overview of the true use of these financial resources is given in Table 3.3.1.

As part of maintenance of watercourses, mowing, cleaning and repairs were carried out to structures which ensure flood protection, as was the liquidation of invasions of non-indigenous plant species (giant hogweed, Japanese knotweed) and the maintenance of riverbank vegetation.

Table 3.3.2 gives an overview of the financial resources used in recent years from the individual financial sources for the maintenance and repair of watercourses and waterworks.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Source</th>
<th>Plan</th>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and repair to watercourses</td>
<td>SR</td>
<td>119.82</td>
<td>119.70</td>
</tr>
<tr>
<td>Operation of watercourses and associated water-management structures</td>
<td>SR</td>
<td>9.40</td>
<td>9.01</td>
</tr>
<tr>
<td>Care for the Countryside Programme</td>
<td>SR</td>
<td>1.00</td>
<td>0.62</td>
</tr>
<tr>
<td>Flood prevention</td>
<td>SR</td>
<td>10.00</td>
<td>8.91</td>
</tr>
<tr>
<td>Other non-investment expenses</td>
<td>SR</td>
<td>18.80</td>
<td>18.55</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>158.02</td>
<td>156.79</td>
</tr>
</tbody>
</table>

Source: AWMA

Table 3.3.2 Coverage of expenses of AWMA for maintenance and repairs to watercourses and water-management structures in millions of CZK

<table>
<thead>
<tr>
<th>Source for coverage of expenses</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA budget</td>
<td>70.8</td>
<td>68.1</td>
<td>77.6</td>
<td>77.0</td>
<td>119.7</td>
</tr>
<tr>
<td>Care for Countryside Programme</td>
<td>6.6</td>
<td>2.5</td>
<td>1.0</td>
<td>2.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Flood prevention measures</td>
<td>0.0</td>
<td>0.0</td>
<td>35.2</td>
<td>5.7</td>
<td>8.9</td>
</tr>
<tr>
<td>Total state budgt</td>
<td>77.4</td>
<td>70.6</td>
<td>113.8</td>
<td>85.1</td>
<td>129.2</td>
</tr>
<tr>
<td>State Soil Improvement Fund</td>
<td>0.0</td>
<td>1.0</td>
<td>5.6</td>
<td>3.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>77.4</td>
<td>71.6</td>
<td>119.4</td>
<td>88.9</td>
<td>129.2</td>
</tr>
</tbody>
</table>

Source: AWMA
Table 3.3.3 gives the division of non-investment expenses for watercourses in the administration of AWMA and maintenance and repairs of main drainage facilities in the administration of the Land Fund according to region in millions of CZK in the year 2002.

<table>
<thead>
<tr>
<th>Region</th>
<th>Maintenance and repairs to watercourses</th>
<th>Operation</th>
<th>Rectification of flood damage</th>
<th>Main drainage facilities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prague</td>
<td>14,800</td>
<td>0.280</td>
<td>2,798</td>
<td>6,043</td>
<td>23,021</td>
</tr>
<tr>
<td>České Budějovice</td>
<td>19,200</td>
<td>0.182</td>
<td>13,671</td>
<td>12,383</td>
<td>45,636</td>
</tr>
<tr>
<td>Přerův</td>
<td>14,300</td>
<td>0.277</td>
<td>6,295</td>
<td>4,744</td>
<td>25,616</td>
</tr>
<tr>
<td>Úste nad Labem</td>
<td>16,700</td>
<td>1.085</td>
<td>1,938</td>
<td>2,896</td>
<td>14,489</td>
</tr>
<tr>
<td>Hradec Králové</td>
<td>18,300</td>
<td>1.285</td>
<td>0</td>
<td>12,516</td>
<td>32,101</td>
</tr>
<tr>
<td>Brno</td>
<td>29,800</td>
<td>1.789</td>
<td>7,938</td>
<td>23,930</td>
<td>52,667</td>
</tr>
<tr>
<td>Ostrava</td>
<td>14,500</td>
<td>1.078</td>
<td>8,352</td>
<td>23,930</td>
<td>52,667</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119,700</strong></td>
<td><strong>9,006</strong></td>
<td><strong>24,972</strong></td>
<td><strong>54,872</strong></td>
<td><strong>208,550</strong></td>
</tr>
</tbody>
</table>

Source: AWMA

In 2002, on the watercourses managed by AWMA there was a continuation in the rectification of flood damage from the year 1997. The flood damage from the following years is also being gradually eliminated.

Table 3.3.6 Rectification of flood damage from the years 2000 and 2002 to watercourses administered by AWMA in 2002 in millions of CZK

<table>
<thead>
<tr>
<th>Source</th>
<th>Non-investment investment costs</th>
<th>Investment costs</th>
<th>Total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme 229 112</td>
<td>1,629</td>
<td>3,871</td>
<td>5,500</td>
</tr>
<tr>
<td>Programme 229 113</td>
<td>0</td>
<td>24,973</td>
<td>24,973</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,629</strong></td>
<td><strong>28,844</strong></td>
<td><strong>30,473</strong></td>
</tr>
</tbody>
</table>

Source: AWMA

Yields from payments for abstractions of water or from rents of water-management structures and other real estate are insignificant, and in the medium term they are around CZK 8 to 11 million.

The slight drop in incomes from water abstractions and in other revenues was eliminated in 2002 by a growth in incomes from the renting of water-management structures. The overall structure of incomes of AWMA is shown in the following Table 3.3.4.

Table 3.3.5 Rectification of flood damage from the years 2000 and 2002 to watercourses administered by AWMA in 2002 in millions of CZK

<table>
<thead>
<tr>
<th>Source</th>
<th>Non-investment investment costs</th>
<th>Investment costs</th>
<th>Total costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme 329 181</td>
<td>0.013</td>
<td>0</td>
<td>0.013</td>
</tr>
<tr>
<td>Programme 329 184</td>
<td>29,206</td>
<td>0</td>
<td>29,206</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29,219</strong></td>
<td><strong>0</strong></td>
<td><strong>29,219</strong></td>
</tr>
</tbody>
</table>

Source: AWMA

An overview of the overall expenses for the rectification of flood damage broken down according to source and divided up into investment and non-investment resources is given by Table 3.3.5.
In order to eliminate flood damage from the year 2000 and 2002 to watercourses administered by AWMA, in 2002 the programme 229 110 was initiated for the rectification of flood damage from the year 2000 (sub-programme 229 112) and 2002 (sub-programme 229 113).

In 2002, AWMA implemented investment construction in the total amount of CZK 172.9 million, including a programme of flood prevention measures in the amount of CZK 63.1 million, and it also implemented the rectification of flood damage from the year 1997 in the amount of CZK 29.2 million and the rectification of flood damage from 2000 in the amount of CZK 1.6 million. An overview is given in Table 3.3.7.

### 3.4 Forests of the CR, s.e. – area administrations of watercourses

The vast majority of watercourses managed by Forests of the CR, s.e. are in the upper reaches of the river basins, spring areas and areas with a higher degree of forestation. Forests of the CR, s.e. manages mountain streams even outside the lands intended for fulfilling the function of a forest, because during care for the integrated basin of watercourses, they flow through the agricultural landscape and built-up areas of municipalities.

In 2002, flood situations occurred in mountain streams in several waves. There were a few in the Spring in the mountainous parts of the Republic. Watercourses were affected by two flood waves. The first in July in the areas of Blansko, Zlár nad Sázavou, Benešov and Kolín, and, most importantly, the second, August wave, which affected watercourses administered by the Forests of the CR, s.e. in the South Bohemia, Central Bohemia, Plzeň and Ústí nad Labem region, and partially the Karlovy Vary, Liberec and South Moravia region. The floods of 2002 in watercourses in the competence of Forests of the CR, s.e. did not cause damage of the same extent as the floods of 1997 and 1998, which in the case of mountain streams is given by the differing geomorphology of the afflicted areas. Overall, the damage in 2002 was estimated to be CZK 125 million. The flood flow rates confirmed the justification and functionality of regulation of mountain streams.

Out of the total financial expenses of Forests of the Czech Republic, s.e. in water manage-

### Table 3.3.7 Structure of investments and financial sources of AWMA in millions of CZK

<table>
<thead>
<tr>
<th>Structure of investments</th>
<th>Financial sources</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustment of watercourses</td>
<td>State budget - MA</td>
<td>32.7</td>
<td>32.2</td>
<td>47.2</td>
<td>47.4</td>
</tr>
<tr>
<td>Special-purpose fund</td>
<td>(replacement recultivation)</td>
<td>2.4</td>
<td>3.6</td>
<td>6.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Study of drainage conditions</td>
<td>State Fund for Soil Improvement</td>
<td>4.4</td>
<td>0</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>Revitalisation of watercourses</td>
<td>State budget</td>
<td>94.4</td>
<td>45.3</td>
<td>17.3</td>
<td>30.7</td>
</tr>
<tr>
<td>Flood prevention measures</td>
<td>State budget</td>
<td>8.8</td>
<td>33.6</td>
<td>2.8</td>
<td>63.1</td>
</tr>
<tr>
<td>Rectification of flood damage from year 1997</td>
<td>State budget</td>
<td>27.3</td>
<td>27.0</td>
<td>28.9</td>
<td>29.2</td>
</tr>
<tr>
<td>European Investment Bank</td>
<td>102.4</td>
<td>36.5</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Rectification of flood damage from year 1998</td>
<td>State budget</td>
<td>12.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rectification of flood damage from year 2000</td>
<td>State budget</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>284.6</td>
<td>182.0</td>
<td>102.9</td>
<td>172.9</td>
</tr>
</tbody>
</table>

Source: AWMA
ment in the amount of CZK 451.6 million, expenses of an investment character were CZK 188.1 million. Out of this volume, CZK 104.9 million represents own resources. The investments of Forests of the Czech Republic, s.e. focussed on preventative measures and, in particular, the construction and reconstruction of structures for regulating mountain streams in areas affected by floods. Measures are realised primarily with the aim of creating retention spaces for catching floating debris, stabilisation of longitudinal gradients of flows of transverse structures and ensuring flood prevention by increasing the capacity of river beds. CZK 263.5 million was used for the repair and maintenance of basic means for regulation of mountain streams and other waterworks, of which CZK 183.4 million came from own resources.

The most important activity of Forests of the Czech Republic, s.e. in the field of water management was rectification of flood damage. This primarily involved increasing the capacity of riverbeds, removal of sediment and repairs to retaining walls, paving, transverse structures and barriers. A total of CZK 246.5 million was expended on rectifying flood damage, of which CZK 159.0 million came from own sources.

The following Graphs 3.4.1 and 3.4.2 give a longer-term overview of total annual investment expenses and resources expended on repairs and maintenance.

Graph 3.4.1 Investment expenses of Forests of the Czech Republic, s.e. in the years 1993 - 2002 in millions of CZK – watercourses

Graph 3.4.2 Expenses of Forests of the CR, s.e. in the years 1996 - 2002 in millions of CZK – repair and maintenance of watercourses
In the year 2002, total financial resources in the amount of CZK 108.5 million were expended in the form of a grant on repairs, maintenance and operation of the Elbe-Vltava waterway and the so-called Baха Canal from the state budget via the MA chapter.

The Elbe River Board corporation was supported from these sources with an overall amount exceeding CZK 29 million, of which CZK 15 million was used to repair walls and the electrical fittings of the lock at the water-management structure Klavary, CZK 2.5 million was used to dredge silt from the navigation channel in the section Stfiekov – Ústí nad Labem, and almost CZK 5.0 million was spent on provisional repairs to the control systems of several water-management structures on the Elbe waterway.

Work on the Vltava waterway can be divided up into two periods – before the flood, when planned repairs and reconstruction was carried out, and the period after the flood in August 2002, when work began on the rectification of flood damage.

As part of work on flood prevention, three major dredging operations were carried out in the Vltava in Davle, in Zbraslav, and a dredging operation of the Smíchov port, costing a total of CZK 6.7 million was carried out. There were also repairs to the canals in Štvanice and Podbaba, a repair of the concrete gates of the Smíchov lock, a repair to the small lock Podbaba, dredging of sediment from the canal Vraňany – Hofín, and a repair to the locks Smíchov, Roztoky, Dolánky and Mřežovice and Štěchovice costing CZK 7.8 million, i.e., a total of CZK 23.5 million.

The second stage of the modernisation of the small lock Podbaba was completed for CZK 8.4 million, and illuminations were installed for navigation signs in Skochovice, equipment was installed in the lower anchorages of the water-management structure Orlík, and bypass technology was installed on the water-management structure Hněvkovice for CZK 0.6 million, i.e., for a total of CZK 9.0 million.

### Table 3.4.1 Structure of financing for Forests of the CR, s.e. – regional watercourse administrations in year 2002 in millions of CZK

<table>
<thead>
<tr>
<th>Forests of the CR, s.e.</th>
<th>Own resources total</th>
<th>Grants total</th>
<th>Of this flood damage</th>
<th>Own sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td>104.9</td>
<td>83.2</td>
<td>20.3</td>
<td>64.9</td>
</tr>
<tr>
<td>Non-investments</td>
<td>183.4</td>
<td>80.1</td>
<td>67.2</td>
<td>94.1</td>
</tr>
<tr>
<td>Total</td>
<td>288.3</td>
<td>163.3</td>
<td>87.5</td>
<td>159.0</td>
</tr>
</tbody>
</table>

Source: Forests of the CR, s.e.

### Table 3.4.2 Income of Forest of the CR, s.e. for surface water for the years 1997 - 2002 in thousands of CZK

<table>
<thead>
<tr>
<th>Year</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td>7,030</td>
<td>7,906</td>
<td>7,896</td>
<td>7,876</td>
<td>8,639</td>
<td>9,790</td>
</tr>
<tr>
<td>Price per m³*</td>
<td>0.78</td>
<td>0.92</td>
<td>0.99</td>
<td>1.06</td>
<td>1.17</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Source: Forests of the CR, s.e.

Note: * The unit price for one m³ is given without value added tax

3.5 Waterways

The Elbe-Vltava waterway is of transport importance for the Czech Republic because it is the only river transport connection with the entire European waterway system. On the 171 km-long Czech section of the Elbe from Střekov to the port in Chvaletice, and on the 70 km-long section of the Vltava from the confluence with the Elbe in Mělník up to the port Radotín in Prague, virtually year-round navigation is ensured by a series of weirs even during low flow.

### In the year 2002, total financial resources in the amount of CZK 108.5 million were expended in the form of a grant on repairs, maintenance and operation of the Elbe-Vltava waterway and the so-called Baха Canal from the state budget via the MA chapter.

The Elbe River Board corporation was supported from these sources with an overall amount exceeding CZK 29 million, of which CZK 15 million was used to repair walls and the electrical fittings of the lock at the water-management structure Klavary, CZK 2.5 million was used to dredge silt from the navigation channel in the section Střekov – Ústí nad Labem, and almost CZK 5.0 million was spent on provisional repairs to the control systems of several water-management structures on the Elbe waterway.
As part of work on the rectification of flood damages, after the disastrous floods of August, dredging on the territory of Prague was carried out at a cost of CZK 7.3 million. Sediment was dredged, and repairs were made to the locks at Modřany, Stvanice, Roztoky, Dolánky and Mířejovice at a cost of CZK 7.5 million. In addition to this, repairs were made to damaged dikes on the canal Podbaba and Dolánky costing CZK 13.6 million, a total of CZK 33.4 million. The control system of the Roztoky and Dolánky locks was modernised at a cost of CZK 5.6 million.

The Morava River Board corp. spent CZK 5.5 million provided in the form of a special-purpose non-investment grant for the maintenance and repair of the waterway Otokovice - Rohatec, the so-called Bařa Canal, where there are a total of 13 locks, and which has a primarily recreational function. CZK 3.1 million was used for the repair of the lock Vnorovy II, and the remaining part of the expenses covered the costs for the clearing of the lower anchorages of the other locks.

As part of the programme for the renewal and reconstruction, modernisation and construction of waterways, work was carried out costing CZK 504.9 million from the resources of the State Transport Infrastructure Fund in the year 2002.

In addition to the resources already shown for the ensuring of operation and maintenance of canals of transport significance in the competence of the MA, in the field of care for the development of waterways, the Ministry of Transport (referred to hereinafter as the “MT”) has been carrying out the government approved “Programme for the Development of Water Transport in the Czech Republic up to 2005” since 1997. Under this programme, using funds from the State Fund of Transport Infrastructure, in the year 2002 work on development was carried out costing CZK 504.9 million, which in comparison with the previous year represents a year-on-year increase of 79.9%. Out of this amount the Elbe River Board corp. and Vltava River Board corp. received a total of CZK 347.3 million. Other resources were implemented by the investor Waterways of the Czech Republic Directorate and to a lesser extent by private investors. In order to renew the recreational waterways Otokovice - Rohatec, in 2002 the Waterways of the Czech Republic Directorate carried out minor constructions costing CZK 13.3 million. Under these programmes in support of water transport development, it has not yet been possible to ensure the conditions (issue of planning decision) for the implementation of the constructions “Improvement of Navigation Conditions on the Elbe in the Sections Ústí nad Labem – State Border of CR/FRG” and “Stage Přelouč II” for extending the navigation of the Elbe to Pardubice.

The August floods of 2002 also had a significant impact on the Elbe-Vltava waterway, and they caused significant damage to the structures of the waterway. These damages were calculated by the Elbe River Board corp. and Vltava River Board corp. as a total of CZK 699 million. In addition to the immediate resources provided by the MA, the MD has prepared the programme “Renewal of Structures of Water Transport After the Flood of 2002” for the rectification of flood damage to structures of importance for water transport, and starting from the year 2003 River Board corporation the Elbe River Board corp. and Vltava River Board corp. will be given grants for this work.
4.

MEASURES TO LESSEN THE HARMFUL EFFECTS OF WATER, ESPECIALLY FLOODS

4.1 Catastrophic flood in 2002

In 2002 there was a large number of small floods in the spring, autumn and winter, but the catastrophic August flood was particularly exceptional.

As a result of the unusually warm weather, the spring flood began from the third ten days in January and ended in March. The reason for the flood was rainfall and the thawing of snow. Only half-year to 2-year flow levels were reached, and occasional 5-year flows were reached during the second degree of flood activity (referred to hereinafter as “(DFA)” and the 3rd DFA.

In the April/May period there were occasional half-year to 1-year water flow levels or at 1st or 2nd DFA.

But the situation from 10th June in the Olšava basin was more significant, when the 2nd DFA was reached, and on 24th – 26th June the 2nd DFA was reached on the Úslava.

The flash flood of 15th July in the Hodošnikova river basin area was a serious, albeit local, situation with a periodicity of repeat exceeding 200 years.

In August 2002 most of the territory of the Czech Republic was afflicted by a catastrophic flood which had no precedent in the history of our state. In terms of its extent and destructive consequences it can be compared possibly only with the flood of the year 1997. Over the past five years (1997 - 2002) catastrophic floods have affected virtually the entire territory of our state.

The August flood affected the entire territory of the Vltava basin and the Elbe basin, and part of the Ohře basin and Dyje basin. This extreme hydrological situation occurred after the territory was affected by two waves of extremely intense rainfall. The first wave of rainfall fell from 6th to 8th of August of the year 2002 and affected primarily the border area of southern Bohemia with Austria. The second wave of rainfall on the days 11th to 13th August 2002 gradually affected the areas of southern Bohemia, the entire western half of Bohemia, the Íizerské Mountains, the Czech-Moravia Highlands, part of eastern Bohemia and part of Moravia.

As a result of this extraordinary rainfall, an extreme hydrological situation was also noted. The flow rate of the Vltava in Prague - Chuchli at culmination was estimated at 5 160 m³.s⁻¹ compared with the long-term average of 147 m³.s⁻¹, and the flow rate of the Elbe in Děčín reached a value of 4 760 m³.s⁻¹ upon culmination. In many watercourses the flow rate of water reached a value with a probability of incidence once in every thousand years (for example the Malše, Vltava, Lužnice, Blanice, Lomnice, Skalice and Úslava). The flood mentioned affected 8 out of 14 regions.
The material damage which the flood caused to the assets of state administration and local government, legal and natural persons of citizens of the Czech Republic reached a value of approximately CZK 75.0 billion crowns. But worse than the level of material damages referred to was the fact that 19 people lost their lives as a result of the flood situation in 2002. An overall overview of the damages to property and human lives lost caused by flood situations on the territory of the Czech Republic over the past five years (1997 – 2002) is given in the following Table 4.1.1.

From a comparison of the data given in the table it is evident that although there was comparable flood damage during the catastrophic flood situations in the years 1997 and 2002, in 2002 there was a significant drop in the number of lives lost. The reason for this is the experience gained during the floods in 1997 and also better legislative tools for flood protection.

In 2000 and 2001 four central acts were passed with a significant linkage to flood protection. In 2000 it was the Fire and Rescue Brigades of the Czech Republic Act (Act No. 238/2000 Coll.), the Act Concerning the Integrated Rescue System and Concerning the Amendment of Certain Acts (Act No. 239/2000), and the Act Concerning Crisis Management and Concerning Amendments to Certain Acts (Act No. 240/2000 Coll. – the Crisis Act). In 2001 the Act Concerning Water and Concerning Amendments to Certain Acts (Act No. 254/2001 Coll. – the Water Act) was passed, by which Government Order No. 100/1999 Coll., Concerning Flood Protection, was passed. The passing of this last act was the strongest method of reinforcing flood prevention.

By means of Government Decision No. 977 from 7th November 2002, the government approved the project Evaluation of the Catastrophic Floods of August 2002. The project has a significant interdepartmental character, uses the information of other departments and prepares output which will subsequently be used by other resorts. The specified project is divided up into working stages – the first two will be information for the government of the Czech Republic and the third stage will be terminated with a final report about the project and approved by the government of the Czech Republic.

Table 4.1.1 Flood damage in the years 1997 - 2002

<table>
<thead>
<tr>
<th>year</th>
<th>Loss of life</th>
<th>Damage [CZK billion]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>60</td>
<td>62.6</td>
</tr>
<tr>
<td>1998</td>
<td>10</td>
<td>1.8</td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>3.8</td>
</tr>
<tr>
<td>2002</td>
<td>19</td>
<td>75.1</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>144.3 *)</td>
</tr>
</tbody>
</table>

Note.: *) of this, CZK 20 billion to water-management assets

Source: MA

Picture 4.1.2 Map of the Czech Republic marked with districts affected by flood

Picture 4.1.3 Comparison of size of culmination flow rates of flood in the Vitava in Prague in the years 1827 - 2002

Source: CHMI
By the end of the year 2002 the 1st stage had been completed and the Report on the Meteorological Causes of the Flood Situation in August 2002 and Evaluation of the Extremity of the Causal Rainfall had been submitted to the government for information purposes.

It is wholly evident that the process of rectification after the flood situation had to be initiated almost as soon as the flood had subsided. From the aspect of the concept of flood prevention, this activity is divided up into two phases:

- **I. phase – rectification of flood damage.**
- **II. phase – implementation of preventative measures.**

Flood prevention was neglected throughout virtually the entire second half of the last century. The principle of systematic prevention was not applied thoroughly, and all efforts were concentrated on rectifying flood damage. From the start of the 1970s up to the first half of the 1990s the state concept in the field of water management tended towards the construction of large water structures in the spirit of the age which were not built with the primary purpose of increasing flood protection.

The field of flood protection was covered conceptually by the Strategy for Flood Protection for the Entire Territory of the Czech Republic, which was approved by the Decision of the Government No. 382 from the date 19th April 2000. The material performance of this Strategy is fulfilled through the implementation of the programmes assigned to the departments as part of programme financing.

**Picture 4.1.4 Comparison of size of culmination flow rates of flood in the Elbe in Děčín in the years 1827 - 2002**

![Graph of culmination flow rates](image)

Source: CHMI

**4.2 Programmes for renewal of water-management assets affected by floods**

- In order to implement programmes intended for the rectification of flood damages (229 113) and the renewal of water-management infrastructure (229 810) from 2002, the MA secured financial resources from the European Investment Bank in a total amount of CZK 5.8 billion for the years 2002 - 2005.

After the flood from August this year it was necessary at first to start on the solution of the first phase of liquidation of consequences – to rectify flood damage.

Immediately after the flood situation had died down, the Ministry of Agriculture reacted actively and started to systematically prepare two programmes focussing on the elimination of flood damage.
This consisted of these following programmes shown in Table 4.2.1:

<table>
<thead>
<tr>
<th>ISPROFIN number</th>
<th>Name of programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>229 110</td>
<td>“Elimination of consequences of flood on state water-management assets”</td>
</tr>
<tr>
<td>- sub-programme 229 113</td>
<td>“Elimination of consequences of 2002 flood”</td>
</tr>
<tr>
<td>229 810</td>
<td>“State assistance for renewal of territory affected by the flood in 2002 provided by the Ministry of Agriculture Focussing on the Renewal and Securing of Water-management Infrastructure of Water Supply Systems and Sewerage Systems”</td>
</tr>
</tbody>
</table>

### Programme 229 110 “Elimination of consequences of flood on state water-management assets”

Programme 229 110 “Elimination of consequences of flood on state water-management assets” focuses on the renewal of basic functions of water-management assets in the administration of the river board corporations, Forests of the Czech Republic and the AWMA following floods. The programme deals with damage to assets caused by the flood in 2000 (sub-programme 229 112) and in 2002 (sub-programme 229 113). The programme itself follows on from the previous programme MA 329 180 “Elimination of Damages Caused by Flood of 1997” and programme 329 190 “Elimination of Consequences of Flood of 1998” by which flood damages from the years 1997 and 1998 were eliminated.

In order to secure the financing of the aforementioned programme, as part of the project for renewal following the floods of 2002, Act No. 574/2002 Coll., Concerning the Outline Loan of the Czech Republic from the European Investment Bank for the Financing of Elimination of Flood Damages from the year 2002, was passed. The aim of the loan was to secure the financial resources to finance the elimination of flood damage from 2002 in a total amount of EURO 400 million (approximately CZK 12.5 billion), of which an amount of CZK 5.8 billion was allocated for the area of water management. Of this amount, a total sum of CZK 4.3 billion was allocated to the Programme 229 110 “Elimination of consequences of flood on state water-management assets” (or to its sub-programme 229 113).

As part of sub-programme 229 113, in 2002 1 investment construction was implemented, as well as 58 non-investment events. The greatest number (36 events) were ensured by AWMA. CZK 2382 thousand out of the state budget was invested in 2002, and CZK 131 832 thousand of non-investment financial resources were used. More detailed information about this renewal of water-management assets, including tabular overviews and a description of the most significant events, is given in chapter 7.1.

### Programme 229 810 “State assistance for renewal of territory affected by the flood in 2002 provided by the Ministry of Agriculture Focussing on the Renewal and Securing of Water-management Infrastructure of Water Supply Systems and Sewerage Systems”

Programme 229 810 State assistance for renewal of territory affected by the flood in 2002 provided by the MA focuses on the renewal and securing of water-management infrastructure of water supply systems and sewerage systems. The aim was to secure as quickly as possible the renewal of the basic functions of this infrastructure for public needs. Applicants for this type of grant were cities and municipalities, federations of cities and municipalities (voluntary federations and associations) and water-management joint-stock companies with a greater than 2/3 capital participation by cities and municipalities.

The financing of this programme was ensured partly from national sources in the amount of CZK 0.5 billion and partly from the aforementioned outline loan from the European Investment Bank accepted by Act No. 574/2002 Coll., in the amount of CZK 1.5 billion. By means of these resources it was possible to secure financing of the programme in the total amount of CZK 2.0 billion.

On 25th September 2002, through its resolution No. 926, the Government of the Czech Republic decided inter alia to establish a programme of State Assistance for the Renewal and Securing of Territory Afflicted by an Extraordinary Event provided by the MA and administered by the MA with the Possibility of initiating a financial programme before the approval of documentation.

In view of the fact that it was possible to assume the provision of decisive financial resources from the loan of the EIB from the year 2003, the MA ensured a so-called “start-up package” for the urgent financing of certain events in the amount of CZK 65.0 million by the transfer of CZK 15.0 million from the budget reserve and CZK 50.0 million from savings in the budget chapter of the MA.
In the years 2003 – 2005 the source of the provided grants will be the loan resources of the EIB in a maximum assumed amount of CZK 1,500 million.

The programme complies with the strategy for the renewal of the territory affected by an extraordinary event processed according to Act No. 12/2002 Coll., Concerning State Assistance for the Renewal of Territory Affected by Natural or Other Disasters and Concerning the Amendment of Act No. 363/1999 Coll., Concerning Insurance and Concerning Amendments to Certain Associated Acts (Insurance Act), as subsequently amended. (Act Concerning State Assistance During Renewal of Territory).

The programme focuses on the provision of immediate assistance to owners of water supply and sewerage systems with the aim of:
- renewing the normal operation of existing objects and facilities of water supply systems serving to supply citizens with drinking water,
- replacing affected local sources of drinking water connected in group water supply and sewerage systems,
- construction of new water supply systems in areas where there has been serious contamination of individual sources of water (usually wells); non-compliance with hygiene and quality regulations results in an increased risk of possible incidences of serious epidemics,
- renewal of normal operation of waste water treatment plants, in particular their technological equipment,
- renewal of normal operation of existing sewerage objects and facilities serving to channel waste water and treat it,
- construction of water supply systems and sewerage systems in places of housing construction replacing that in places intended for demolition in the flood zone,
- ensuring and securing greater resilience of water-management infrastructure in the flooded territories.

### 4.3 Flood prevention programmes

The measures in the field of flood prevention in the Czech Republic are implemented on the basis of the Strategy of Flood Prevention for the Territory of the Czech Republic by a set of programmes as part of programme financing.

The management of these programmes is divided up between the following resorts: MA, ME, MT and the Ministry of Information. The most important and most financially demanding of these in this area are the programmes of the MA, via which the level of flood protection is increased in the area of the Czech Republic at greatest risk.

#### Programme 229 060

"Flood prevention"

- There was only a significant change in the situation and understanding of the necessity of flood prevention after the floods in 1997. For the years 2002 – 2005 the MA secured financial resources from the European Investment Bank in the total amount of approximately CZK 2.0 billion for the implementation of the programme Flood Prevention (229 060).

At present the phase of rectifying flood damages to state water-management assets on territory afflicted by the floods in 1997 has finished (financially ensured by the programme 329 180 “Elimination of Damages Caused by Flood of 1997”). Then the second phase was initiated during which significant preventative measures of a regional and supra-regional character are implemented in the worst affected areas. At the time of the floods in August 2002, on the basis of the resolution of the government No. 1344 from the date 19th December 2001, Act No. 123/2002 Coll. was passed, Concerning the Acceptance of a Loan by the Czech Republic from the European Investment Bank for the financing of investment needs associated with carrying out the project Support for Investment Measures for Flood Prevention in the Czech Republic under the Programme Flood Prevention by which financial resources intended for flood prevention from national sources in the amount of CZK 2.15 billion were augmented by a loan from the European Investment Bank in the amount of EURO 60 million (approximately CZK 2.0 billion). By means of these national and foreign sources it was possible to secure financing for the programme 229 060 “Flood prevention” for the years 2002 - 2005 in a ratio of 1:1 in the total amount of CZK 4.15 billion. The reality of the combination of the financial

---

**Table 4.3.1 Programmes of MA focusing on flood prevention**

<table>
<thead>
<tr>
<th>Number ISPROFIN</th>
<th>Name of programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>229 060</td>
<td>“flood prevention”</td>
</tr>
<tr>
<td>229 210</td>
<td>“renewal, dredging and reconstruction of fishponds and reservoirs”</td>
</tr>
</tbody>
</table>

Source: MA
resources of the programme referred to arise from the limited possibilities of the state budget for financing this matter. National sources are thus secured in compliance with section 135 of Act No. 254/2001 Coll., Concerning Water and Concerning the Amendment of Certain Acts (the Water Act), as subsequently amended. On 6th June 2002, the Ministry of Finance approved the documentation of this programme and the actual implementation of the measures was begun.

The programme itself consists of 5 subprogrammes and is recorded in the ISPROFIN database as shown in Table 4.3.2:

The individual sub-programmes are divided up into two groups which are related to each other. The first group consists of sub-programmes of a study character (229 064, 065, 066), the output of which are defined flood territories along the significant watercourses, and for the sub-programme 229 065 the output is also the possible variants of flood protection which are compared with each other according to effectiveness. From these variants, the optimum one is then recommended for implementation.

The second group consists of sub-programmes via which the concrete measures for flood protection are built (229 062, 063). In view of this fact, the programme constitutes a compact whole in which emphasis is placed on the comprehensive nature of the flood protection solution.

Through approval of the documentation of the programme, the duration of the programme was agreed for the period 2002 – 2005, during which significant flood protection measures will be built in the river basins worst affected, especially by the flood of 1997.

The implementation of these measures for flood protection is ensured by the administrators of watercourses (the river board corporations, AWMA and possibly Forests of the CR, s.e.). The use of resources for this programme is shown in Table 7.1.3.

For the actual process of agreeing implementation of the individual measures for flood protection, control mechanisms were designated, as were bodies confirming the correctness of construction of the proposed measures. Supervision of compliance of the prepared events with the issue of environmental protection is ensured by a so-called environmental expert. His task is to cooperate from the stage of the preparation of the investment intentions and proposals with investors (the river board corporations, AWMA and possibly Forests of the CR, s.e.), and on the basis of mutual consultations to incorporate additions (or amend the draft of the measure) and complete the documentation for further discussion in such a way that the negative impacts on the environment are minimised. Investors shall also submit a draft of the project for approval to the so-called Coordination Unit of the project. Upon the request of the Coordination Unit of the project, the environmental expert will prepare an evaluation for every event in which he will take into account national legislation in the field of the environment (Act No. 244/1992 Coll., Concerning Evaluation of Environmental Impact and Act No. 100/2001 Coll., Concerning Environmental Impact and Concerning Changes to Certain Associated Acts) and compliance with the standards and procedures of the European Union in the field of environmental protection.

The eventual aim of the programme in the threatened areas in the Czech Republic is to increase the level of protection in built-up areas from Q20 to at least Q50 and, in justified cases, even on non-built-up areas from Q5 to Q20. The construction of new retention areas located in key parts of river basins which enable the transformation of the flood wave will become the basis for protection in these territories. And under the programme “Flood prevention” there will be an increase in the length of the

4. Measures to lessen the harmful effects of water, especially floods

Table 4.3.2. Structure of programme 229 060 “Flood prevention”

<table>
<thead>
<tr>
<th>No. ISPROFIN</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>229 060</td>
<td>programme “Flood prevention”</td>
</tr>
<tr>
<td>229 062</td>
<td>sub-programme “Construction and renewal of polders, reservoirs and dikes”</td>
</tr>
<tr>
<td>229 063</td>
<td>sub-programme “Increasing flow capacity of watercourses”</td>
</tr>
<tr>
<td>229 064</td>
<td>sub-programme “Designating flood territories”</td>
</tr>
<tr>
<td>229 065</td>
<td>sub-programme “Study of drainage conditions”</td>
</tr>
<tr>
<td>229 066</td>
<td>sub-programme “Defining scope of territory threatened by special floods”</td>
</tr>
</tbody>
</table>

Source: MA
designated flood territory along significant water courses from the current 51.4% to a value of 75.0%.

In the prepared further stage of the programme “Flood prevention”, in the years 2006 – 2010 measures will be implemented primarily in the Vltava basin and partly in the basins of the Ohre, Elbe and Morava damaged by the catastrophic floods of August 2002.

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

Immediately after the flood in August 2002, the MA proposed the preventative programme 229 210 “Renewal, dredging and reconstruction of fishponds and reservoirs”, the aim of which is the renewal of the basic functions of fishponds and reservoirs after the flood in August 2002 and the reinforcing of the retention function of fishponds and reservoirs on the territory of the Czech Republic.

On 4th April 2003 the Ministry of Finance approved the documentation of this programme for the period 2003 - 2006.

Before the establishment of this programme the MA provided non-investment grants for the dredging of fishponds. At present certain events of this type are ongoing, and all of them will be completed by the end of 2003.

Programme 215 120 “Support for prevention in territories threatened by unfavourable climatic influences”

In addition, the programme “Support for prevention in territories threatened by unfavourable climatic influences” is also being implemented under the administration of the ME.

This programme consists of three sub-programmes and is given in the database ISPROFIN:

<table>
<thead>
<tr>
<th>No. ISPROFIN</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>215 120</td>
<td>Programme of support for prevention in territories threatened by unfavourable climatic influences</td>
</tr>
<tr>
<td>215 122</td>
<td>Sub-programme reporting system for flood protection</td>
</tr>
<tr>
<td>215 123</td>
<td>Sub-programme acquiring documentation of flood territory</td>
</tr>
<tr>
<td>215 124</td>
<td>Sub-programme dealing with instability of slopes in the Czech Republic</td>
</tr>
</tbody>
</table>

Source: ME
5.

WATER SUPPLY AND SEWERAGE SYSTEMS FOR PUBLIC NEED

5.1 Drinking water supply

89.8% of inhabitants were supplied with drinking water from water supply systems for public need in 2002.

In 2002 9.16 million inhabitants, i.e., 89.80% out of the entire population of the Czech Republic were supplied from water supply systems for public need. In all the water supply systems for public need a total of 753.09 million m³ of drinking water was produced. The losses of drinking water reached 171.66 million m³, for the main operators, i.e., 23.80% of the water produced intended for implementation.

Graph 5.1.1 Development in number of supplied inhabitants and specific need of water charged in the years 1989 and 1996 – 2002

Table 5.1.1 Supply of water from public water supply systems in 1989 and 1996 – 2002

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhabitants (median state)</td>
<td>thou. inhabs.</td>
<td>10,316</td>
<td>10,304</td>
<td>10,295</td>
<td>10,283</td>
<td>10,273</td>
<td>10,287</td>
<td>10,201</td>
<td></td>
</tr>
<tr>
<td>Inhabitants really supplied with water from water supply system for public need</td>
<td>thou. inhabs.</td>
<td>8,537</td>
<td>8,866</td>
<td>8,866</td>
<td>8,879</td>
<td>8,936</td>
<td>8,952</td>
<td>8,981</td>
<td>9,156</td>
</tr>
<tr>
<td>%</td>
<td>82.4</td>
<td>86.0</td>
<td>86.0</td>
<td>86.2</td>
<td>86.9</td>
<td>87.1</td>
<td>87.3</td>
<td>89.8</td>
<td></td>
</tr>
<tr>
<td>Water produced from water supply system for public need</td>
<td>million m³/year</td>
<td>1,251</td>
<td>944</td>
<td>887</td>
<td>843</td>
<td>800</td>
<td>778</td>
<td>754</td>
<td>753</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>75.5</td>
<td>70.9</td>
<td>67.4</td>
<td>63.4</td>
<td>62.2</td>
<td>60.3</td>
<td>60.2</td>
<td></td>
</tr>
<tr>
<td>Total charged water</td>
<td>million m³/year</td>
<td>924.4</td>
<td>761.4</td>
<td>604.0</td>
<td>579.9</td>
<td>564.2</td>
<td>554.1</td>
<td>535.6</td>
<td>545.3</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>67.9</td>
<td>65.0</td>
<td>62.4</td>
<td>60.7</td>
<td>59.6</td>
<td>57.6</td>
<td>58.7</td>
<td></td>
</tr>
<tr>
<td>Specific need from water produced *</td>
<td>/ person per day</td>
<td>401</td>
<td>292</td>
<td>274</td>
<td>260</td>
<td>245</td>
<td>237</td>
<td>231</td>
<td>225</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>72.8</td>
<td>68.3</td>
<td>64.8</td>
<td>61.1</td>
<td>59.1</td>
<td>57.5</td>
<td>56.1</td>
<td></td>
</tr>
<tr>
<td>Specific amount of water charged in total *</td>
<td>/ person per day</td>
<td>298</td>
<td>195</td>
<td>187</td>
<td>179</td>
<td>173</td>
<td>169</td>
<td>164</td>
<td>163</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>65.4</td>
<td>62.8</td>
<td>60.1</td>
<td>58.1</td>
<td>56.7</td>
<td>54.9</td>
<td>54.7</td>
<td></td>
</tr>
<tr>
<td>Specific amount of water charged for households *</td>
<td>/ person per day</td>
<td>171</td>
<td>116</td>
<td>113</td>
<td>110</td>
<td>109</td>
<td>107</td>
<td>104</td>
<td>103</td>
</tr>
<tr>
<td>%</td>
<td>100.0</td>
<td>67.8</td>
<td>66.1</td>
<td>64.3</td>
<td>63.7</td>
<td>62.6</td>
<td>60.7</td>
<td>60.2</td>
<td></td>
</tr>
<tr>
<td>Loss of water per 1 km of system *</td>
<td>l/km per day</td>
<td>16,842</td>
<td>16,801</td>
<td>14,159</td>
<td>12,149</td>
<td>10,704</td>
<td>9,706</td>
<td>9,141</td>
<td>8,358</td>
</tr>
<tr>
<td>Loss of water per 1 supplied inhab. *</td>
<td>l/person per day</td>
<td>90</td>
<td>93</td>
<td>79</td>
<td>71</td>
<td>63</td>
<td>60</td>
<td>57</td>
<td>53</td>
</tr>
</tbody>
</table>

Source: CSO
Note *: data for water supply systems and sewerage systems of main operators
In 2002, under Decree of the Czech Statistical Office No. 393/2001 Coll., the Census of Water Supply and Sewerage Systems was included in the Programme of Statistical Ascertainment. The main aim of the census was to gain an overall impression of the results for all the water supply systems, sewerage systems and waste water treatment plants serving the public need before the accession of the Czech Republic as a member state of the European Union and to improve the quality of the summarised data concerning water supply systems and sewerage systems of the Czech Republic provided to national institutions and international organisations (Eurostat, OECD). The census has created a framework for the annual selective statistical ascertaining of technical and economic information for the field, and it also means a rapid increase in the monitored data in comparison with previous years.

■ The trend of a drop in volume of drinking water produced and specific need per one inhabitant has not yet stopped.

■ The greatest share of inhabitants supplied from the public water supply system for public need in 2002 was in the capital Prague (99.6%) and in the Ústí nad Labem district (96.2%), whereas the lowest proportion was in the Central Bohemia region (74.8%) and the Přešov region (81.2%).

■ The length of the water supply network increased by 1,537 km compared with the year 2001.

■ The length of the water supply network reached 56,273 km, i.e. 6.37 km per connected inhabitant.

■ The number of water supply connections increased by 1,378 to 1,471,584.

■ The length of water supply connections increased by 8,521 km and reached 23,251 km.

■ There are 2.63 m of connection per one connected inhabitant.
5.2 Removal and treatment of communal waste water

In 2002, 77.40% of inhabitants lived in homes connected to the sewerage system for public need.

In 2002, 7.89 million inhabitants lived in homes connected to the sewerage systems for public need. A total of 576.26 million m³ of waste water was discharged into the sewerage system for public need. Out of this amount 92.6% of waste water was treated (without the inclusion of rainwater), which represents 533.59 million m³. The development trends for sewerage systems for public need and the treatment of waste water are documented in the longer timescale by Table 5.2.1 and Graph 5.2.1.

The lowest proportion of inhabitants connected to the sewerage system is in the Central Bohemia region.

Graph 5.2.1 Development in numbers of inhabitants living in homes connected to the sewerage system for public need and amount of discharged and treated waste water in the years 1989 and 1996 – 2002

Source: CSO, MA
### Table 5.2.2 Number of inhabitants living in homes connected to the sewerage system for public need and amount of discharged and treated waste water in 2002 in the individual regions

<table>
<thead>
<tr>
<th>Region, territory</th>
<th>Inhabitants living in homes connected to the sewerage system for public need</th>
<th>Waste water discharged into sewerage systems for public need</th>
<th>Treated waste water, excluding rainwater</th>
<th>Population connected to sewerage system (number)</th>
<th>Total number of inhabitants (%)</th>
<th>Total number of inhabitants (thou. inhabs)</th>
<th>Waste water discharged into sewerage systems (thou. m³)</th>
<th>Treated waste water (thou. m³)</th>
<th>Proportion of treated waste water, excluding rainwater (%)</th>
<th>Ratio of treated water to untreated water, excluding rainwater</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Prague</td>
<td>1 149 000</td>
<td>99.2</td>
<td>91 984</td>
<td>91 984</td>
<td>100.0</td>
<td>1 149 000</td>
<td>91 984</td>
<td>91 984</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Central Bohemia Region</td>
<td>667 620</td>
<td>59.3</td>
<td>47 193</td>
<td>44 832</td>
<td>95.0</td>
<td>667 620</td>
<td>44 832</td>
<td>44 832</td>
<td>95.0</td>
<td></td>
</tr>
<tr>
<td>South Bohemia Region</td>
<td>528 830</td>
<td>84.6</td>
<td>40 591</td>
<td>36 613</td>
<td>90.2</td>
<td>528 830</td>
<td>36 613</td>
<td>36 613</td>
<td>90.2</td>
<td></td>
</tr>
<tr>
<td>Pilsen Region</td>
<td>419 730</td>
<td>76.4</td>
<td>32 074</td>
<td>29 219</td>
<td>87.0</td>
<td>419 730</td>
<td>29 219</td>
<td>29 219</td>
<td>87.0</td>
<td></td>
</tr>
<tr>
<td>Karlovy Vary Region</td>
<td>252 580</td>
<td>83.2</td>
<td>16 284</td>
<td>15 893</td>
<td>97.6</td>
<td>252 580</td>
<td>15 893</td>
<td>15 893</td>
<td>97.6</td>
<td></td>
</tr>
<tr>
<td>Ústí nad Labem Region</td>
<td>671 000</td>
<td>81.9</td>
<td>44 529</td>
<td>41 146</td>
<td>92.4</td>
<td>671 000</td>
<td>41 146</td>
<td>41 146</td>
<td>92.4</td>
<td></td>
</tr>
<tr>
<td>Liberec Region</td>
<td>290 410</td>
<td>67.9</td>
<td>16 782</td>
<td>17 003</td>
<td>95.8</td>
<td>290 410</td>
<td>17 003</td>
<td>17 003</td>
<td>95.8</td>
<td></td>
</tr>
<tr>
<td>Hradec Králové Region</td>
<td>695 470</td>
<td>72.1</td>
<td>30 157</td>
<td>27 473</td>
<td>91.1</td>
<td>695 470</td>
<td>27 473</td>
<td>27 473</td>
<td>91.1</td>
<td></td>
</tr>
<tr>
<td>Pardubice Region</td>
<td>339 860</td>
<td>67.1</td>
<td>21 772</td>
<td>20 303</td>
<td>91.1</td>
<td>339 860</td>
<td>20 303</td>
<td>20 303</td>
<td>91.1</td>
<td></td>
</tr>
<tr>
<td>Vysočina Region</td>
<td>410 250</td>
<td>79.2</td>
<td>21 172</td>
<td>19 725</td>
<td>88.2</td>
<td>410 250</td>
<td>19 725</td>
<td>19 725</td>
<td>88.2</td>
<td></td>
</tr>
<tr>
<td>South Moravia Region</td>
<td>677 850</td>
<td>78.2</td>
<td>56 962</td>
<td>52 716</td>
<td>93.2</td>
<td>677 850</td>
<td>52 716</td>
<td>52 716</td>
<td>93.2</td>
<td></td>
</tr>
<tr>
<td>Olomouc Region</td>
<td>466 630</td>
<td>73.5</td>
<td>32 117</td>
<td>28 713</td>
<td>89.4</td>
<td>466 630</td>
<td>28 713</td>
<td>28 713</td>
<td>89.4</td>
<td></td>
</tr>
<tr>
<td>Zlín Region</td>
<td>443 010</td>
<td>74.6</td>
<td>31 540</td>
<td>28 954</td>
<td>91.8</td>
<td>443 010</td>
<td>28 954</td>
<td>28 954</td>
<td>91.8</td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>7 899 320</td>
<td>77.4</td>
<td>576 262</td>
<td>533 597</td>
<td>92.6</td>
<td>7 899 320</td>
<td>533 597</td>
<td>533 597</td>
<td>92.6</td>
<td></td>
</tr>
</tbody>
</table>

Source: CSO

Note: including water supply systems not included in the statistical investigation
5.3 Development of water supply and sewerage charges

Water supply and sewerage charges increased by an average of 7.5% in comparison with 2001.

In 2002 the average water supply charge in the Czech Republic, including VAT, calculated according to implementation prices, was CZK 20.47/m³ and the average sewerage charge, including VAT, was CZK 17.22/m³.

The limit values of the sum of water supply and sewerage charges in 2002 came to a minimum of CZK 19.86/m³ and a maximum of CZK 48.83/m³. The average price was CZK 37.69/m³. A more detailed overview processed according to the calculation information is given by Table 5.3.1.

In relation to the average values for the Czech Republic (100%), the price differences in the individual regions in the year 2002 varied from 39% to 44% for the lowest prices, and from 137% to 143% for the highest prices. For minimum prices there was no change when comparing 2002 and 2001, for average prices there was an increase in the year 2002 by 7.5%, and for maximum prices there was also an increase by 8.1%.

### Table 5.3.1 Water supply and sewerage charges in the year 2002 (including VAT)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>Water supply systems</th>
<th>Sewerage systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted arithmetic average</td>
<td>CZK/m³</td>
<td>20.47</td>
<td>17.22</td>
</tr>
<tr>
<td>for Czech Republic</td>
<td></td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Minimum value</td>
<td>CZK/m³</td>
<td>8.00</td>
<td>7.56</td>
</tr>
<tr>
<td>% from line 1</td>
<td></td>
<td>39.10</td>
<td>43.90</td>
</tr>
<tr>
<td>Maximum value</td>
<td>CZK/m³</td>
<td>28.04</td>
<td>24.59</td>
</tr>
<tr>
<td>% from line 1</td>
<td></td>
<td>137.10</td>
<td>142.90</td>
</tr>
</tbody>
</table>

Source: VÚV TGM
6.

SOURCE OF POLLUTION
AND WATER PROTECTION

6.1 Point sources of pollution

The production of pollution increased in 2002 in comparison with 2001 in indicators for dissolved inorganic salt and suspended solids, and it practically stagnated in indicators of biochemical consumption of oxygen and chemical consumption of oxygen.

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

The production of organic pollution according to the biochemical consumption of oxygen (BCO5) fell by 2% and increased in the indicators of chemical consumption of oxygen designated by the dichromate method (CCO5r) by 4,891 t (0.8%). In the indicator of dissolved inorganic salts (DIS) there was an increase in 2002 in comparison with 2001 by 113,808 t (by 15.8%), and in the indicator of suspended solids (SS) it was 42,801 t (13.5%). These changes occurred mainly as a result of the flood (NL) and as a result in changes in the discharge of mine water (DIS).

In comparison with 2001, discharged pollution increased in these indicators: BCO5 by 7,274 t (46.4%), CCO5r by 17,593 t (23.6%), DIS by 97,372 t (14.7%) and NL by 17,466 t (65.4%). There was a significant increase in the pollution released as a result of the flood. Several important waste water treatment plants in the Vltava basin (CWWTP Prague, WWTP České Budějovice, WWTP Písek) were completely out of operation for several months in 2002 as a result of the flood and damage to mechanical equipment; in better cases only the mechanical stage of treatment was in operation. In the Vltava basin the discharged pollution in 2002 increased in comparison with the year 2001 by 211% according to BCO5, and according to CCO5r by 108% and according to NL by 230%. In the other basins the discharged pollution according to BCO5 was reduced by 0.9%, according to CCO5r by 7.6%, and according to NL by 2.4% as a result of the operation of new and reconstructed waste water treatment plants (referred to hereinafter as WWTP) completed in 2001, or 2002, the intensification of old WWTP, and the connection of certain sewerage systems for public need to WWTP. The discharged pollution is also being reduced by the fact that for certain WWTP the chemical condensation of phosphor is being applied, which also lead to a reduction in the discharged organic pollution characterised by indicators of BCO5 and CCO5r.
Graph 6.1.1 Discharged and charged pollution 1990 – 2002

Source: VÚV T.G.M., river board corps.
In industry there was a significant decrease in discharged pollution from ALIACHEM – Synthesia, a. s., Pardubice (by 1,206 t CCOCr and 366 t NL), BIOCEL, a. s. Paskov (by 308 t CCOCr) and from Spolek pro chemickou a hutní výrobu, a. s. Ústí nad Labem (by 766 t CCOCr and 243 t BCO 5). On the other hand, a greater amount of pollution was discharged in 2002 in comparison with 2001 from Sokolovská uhelná, a. s. Chodov (by 166 t CCOCr) and OP papírna, s. r. o. in Olšany (by 277 t CCOCr).

In the communal sphere there was a significant decrease in discharged pollution from these cities: Ostrava (by 53 t BCO5 and 187 t CCOCr), Trebič (by 35 t BCO, and 100 t CCOCr). Most (by 53 t BCO, and 249 t CCOCr). On the other hand, as a result of the flood more pollution was discharged from these cities: Prague (by 7,822 t BCO5 and 20,396 t CCOCr), České Budějovice (by 467 t BCO5 and 956 t CCOCr), České Budějovice (by 70 t BCO5 and 156 t CCOCr), Klatovy (by 101 t BCO5, and 214 t CCOCr).

According to data gathered on the basis of decree No. 431/2001 Coll., in the year 2002 sewerage systems for public need contributed 63.9% to the total volume of waste water released into watercourses, excluding cooling water. The share of sewerage systems for public need of the amount of discharged pollution was as follows: BCO5 77.9%, CCOCr 67.7 % and NL 63.9 %. The share of sewerage systems for public need of the overall pollution burden of water-courses from point sources of pollution in 2002 was approximately 10% higher than in 2001 as a result of the floods.

In 1990 – 2002 it was possible to decrease the discharged amount of dangerous and especially dangerous substances.

For example the amount of mercury was reduced from approximately 2.5 t to less than 0.5 t. In 2002 there was also a significant drop in the released amount of AOX. Spolek pro chemickou a hutní výrobu, a. s. in Ústí nad Labem reduced AOX by approximately 10 t/year. There was also a significant drop in macronutrients (nitrogen, phosphorous). According to available data the amount of phosphorous dropped in this period by 41% and the amount of inorganic nitrogen dropped by approximately 28%. The drop occurred mainly because biological removal of nitrate and biological or chemical removal of phosphorous was applied in the technology of treating waste water for new and intensified waste water treatment plants.

Out of the most significant events for sources of pollution above 2000 EI in 2002, waste water treatment plants (WWTP) with a total capacity of 60 279 EI were completed (N = nitrification, DN = denitrification, BP = biological removal of phosphorous, CHP = chemical removal of phosphorous):
6. Sources of pollution and water protection

6.2 Non-point pollution

The quality of surface and groundwater is significantly impacted by non-point pollution – in particular pollution from farming, atmospheric deposition and eroded material washed off from the land. With the continuing drop in point pollution, the significance of this non-point pollution grows. Its proportion is fundamental, especially for nitrates and acidification but less so for phosphorous, and differs in different parts 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 deposition.

In 2002 the Water Management Research Institute T.G.M. completed a five-year research programme VaV “Limiting of Non-point Pollution of Surface and Groundwater of the Czech Republic”, the result of which was, inter alia, a designation of areas at risk from nitrates, phosphorous and acidification. On the basis of the output of this project, a government order was prepared with a definitive designation of the vulnerable areas according to the directive of the Council 91/676/EU (so-called nitrate directive) and a list of binding measures for vulnerable areas.
6.3 Accident pollution

In the year 2002, on the territory of the Czech Republic the Czech Environmental Inspectorate recorded 246 cases of accident pollution or threat to water quality, of which 12 cases involved groundwater.

In comparison with 2001 the number of accidents in waters is 83 higher. In 2002 there were 133 accidents as a result of the floods, and these were recorded separately. The most frequent group of polluting substances remains oil substances (49.2% out of the total number of recorded cases), followed by chemical substances (8.9%). In a breakdown according to the origin of the accident, accidents were caused most frequently in transport (10.6%), and after this in agriculture (7.4%). In 44.7% of cases the perpetrators were not discovered. In 2002, the CEI participated in the investigation of 247 cases of accidents, of which it investigated 72 accidents alone and 49 accidents jointly with environmental departments of district authorities, which themselves investigated 112 cases alone. For breaches of the laws valid in water management, in 2002 the CEI imposed a total of 468 fines, of which 402 acquired legal authority (they represent a total of CZK 18.443 million).
7.

FINANCIAL SUPPORT FOR INVESTMENTS IN WATER SUPPLY SYSTEMS AND SEWERAGE SYSTEMS FOR PUBLIC NEED, FOR ADMINISTRATORS OF WATERCOURSES AND IMPROVEMENT IN THE STATE OF THE COUNTRYSIDE

7.1 Financial support of the Ministry of Agriculture

In 2002, the state, via the programmes of the MA, supported the development of water-management infrastructure of water supply systems and sewerage systems with almost CZK 2 billion of financing.

In 2002, under the programmes MA 329 030 “Construction and Technical Renewal of Water Supply Systems and Water Treatment Plants” and 329 040 “Construction and Technical Renewal of Waste Water Treatment Plants and Sewerage Systems” focussing on the implementation of measures to fulfil the directives of the EU in the field of water supply systems and sewerage systems itself support was provided in the total approximate amount of CZK 2 billion. In comparison with the year 2001 this is a significant increase by 125%. Support from the state budget more than doubled, and support provided to investors in the form of a preferential loan from the EIB almost trebled.

In 2002, the programme 229 810 “State Assistance During the Renewal and Securing of Territory Afflicted by Extraordinary Events Provided by the MA Focusing on the Renewal and Securing of Water-Management Infrastructure of Water Supply Systems and Sewerage Systems” was instituted as an essential reaction to the damaged structures of facilities of water supply systems and sewerage systems resulting from the August floods. In order to start up this programme, the MA secured financial resources from the state budget in the amount of CZK 65 million, which were invested virtually in full.

<table>
<thead>
<tr>
<th>Form of support</th>
<th>Water supply systems and water treatment plants</th>
<th>Sewerage systems and waste water treatment plants</th>
<th>Renewal of water supply systems and sewerage systems after floods of 08/2002</th>
<th>MA total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refundable financial assistance</td>
<td>52.595</td>
<td>0</td>
<td>0</td>
<td>52.595</td>
</tr>
<tr>
<td>Grants</td>
<td>698.964</td>
<td>564.262</td>
<td>64.995</td>
<td>1 328.221</td>
</tr>
<tr>
<td>Total</td>
<td>751.559</td>
<td>564.262</td>
<td>64.995</td>
<td>1 380.816</td>
</tr>
</tbody>
</table>

Source: MA

<table>
<thead>
<tr>
<th>Financial sources</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants of state budget</td>
<td>1 245</td>
<td>918</td>
<td>447</td>
<td>1 328</td>
</tr>
<tr>
<td>Refundable financial assistance</td>
<td>473</td>
<td>422</td>
<td>219</td>
<td>53</td>
</tr>
<tr>
<td>Support of state budget</td>
<td>1 718</td>
<td>1 340</td>
<td>666</td>
<td>1 381</td>
</tr>
<tr>
<td>EIB</td>
<td>568</td>
<td>60</td>
<td>222</td>
<td>616</td>
</tr>
<tr>
<td>Support - total</td>
<td>2 286</td>
<td>1 400</td>
<td>888</td>
<td>1 997</td>
</tr>
</tbody>
</table>

Source: MA
The MA declared many other programmes outside the field of water-management infrastructure of water supply systems and sewerage systems the aim of which was to rectify the consequences of the previous floods, the renewal of water-management assets after the devastating floods in the year 2002 and the implementation of flood prevention measures.

The use of state financial resources for capital and current expenses is given in the following Tables 7.1.3 and 7.1.4.

As part of the administration of small waterways, repairs and maintenance of tangible fixed assets and care for unregulated watercourses was carried out in 1,427 events. Amongst the most significant events were the dredging of the watercourses Blatenský, Kozárovický, Babický and Bečva - Haf and repair of the sealing on the Krhovice – Hevlín irrigation channel, which was diverted to watercourses.

Dredging was carried out in 125 fishponds. Amongst the most significant fishponds which were dredged in 2002 were Slavíček, Starý splav, Obecní Velký, Schof and Zákôv. In another nine fishponds, the most significant of which include Kout and Rohozejcký, dredging was started in the year 2002.

Amongst the most important events for the maintenance and repair of tangible fixed assets on watercourses of importance for transport on the Vltava, Elbe and Morava in particular, were:

- **on the Vltava** in particular, the dredging of the Smíchov port, the passenger shipping wharfs, the pool of the water structure Modřany and repairs to 10 locks, 5 water structures and the lateral canal Vraňany – Hofín,
- **on the Elbe** in particular, repairs to 20 water structures in the section Pardubice - Šťekov and dredging of the navigation channel in the section Šťekov – Ústí nad Labem,
- **on the Morava** in particular, the dredging of 10 locks and canals, for example the section Vnorovy – Stražnice.

### Table 7.1.3
State financial resources provided by MA for capital and current expenses as part of programme financing in the programmes 229 060, 229 110 and 329 180 in thousands of CZK

<table>
<thead>
<tr>
<th>Registration number of programme</th>
<th>Name of programme</th>
<th>Expenditure for financing of programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>229 060</td>
<td>Flood prevention</td>
<td>186 420</td>
</tr>
<tr>
<td>229 110</td>
<td>Rectifying consequences on state water-management assets</td>
<td>176 447</td>
</tr>
<tr>
<td>329 180</td>
<td>Rectifying damages caused by the flood of 1997</td>
<td>725 371</td>
</tr>
</tbody>
</table>

Source: MA

### Table 7.1.4
Non-investment support for other measures in water-management provided by the MA in thousands of CZK

<table>
<thead>
<tr>
<th>Name of support</th>
<th>Level of provided resources</th>
<th>Recipient of support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration of small watercourses</td>
<td>119 820</td>
<td>AWMA</td>
</tr>
<tr>
<td>Dredging of fishponds</td>
<td>176 822</td>
<td>Legal and natural trading persons</td>
</tr>
<tr>
<td>Operation and maintenance of waterways for significance for transport</td>
<td>51 500</td>
<td>Elbe River Board corp.</td>
</tr>
<tr>
<td></td>
<td>6 000</td>
<td>Morava River Board corp.</td>
</tr>
<tr>
<td></td>
<td>51 000</td>
<td>Vltava River Board corp.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108 500</strong></td>
<td>Administrators of waterways of significance for transport</td>
</tr>
</tbody>
</table>

Source: MA
As part of this programme, in the course of 2002 78 investment constructions and 18 non-investment events were implemented or partially built, and 6 studies were prepared.

The largest number of flood prevention measures in the entire Czech Republic, i.e., 62 investment structures and 17 non-investment events, was implemented by the AWMA. In the following overview we give certain of the more significant events:

Table 7.1.5 Use of financial resources under the programme 229 060 “Flood Prevention” in millions of CZK

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Use in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>9.8</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>14.375</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>16.552</td>
</tr>
<tr>
<td>Vitava River Board corp.</td>
<td>31.048</td>
</tr>
<tr>
<td>AWMA</td>
<td>63.118</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134.893</strong></td>
</tr>
</tbody>
</table>

Source: MA

Table 7.1.6 Use of financial resources under programme 329 180 “Rectification of Damage Caused by Floods of 1997” in millions of CZK

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>3.070</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>134.224</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>238.806</td>
</tr>
<tr>
<td>AWMA</td>
<td>7.124</td>
</tr>
<tr>
<td>Forests of the CR. s.e.</td>
<td>12.091</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>417.410</strong></td>
</tr>
</tbody>
</table>

Source: MA

Under this programme, in 2002 60 investment constructions and 56 non-investment events were implemented.

The largest number of events was ensured by the Morava River Board corp. – 21 investment constructions and 36 non-investment events. In the following overview we give some of the more important events:

Table 7.1.6 Use of financial resources under programme 329 180 “Rectification of Damage Caused by Floods of 1997” in millions of CZK

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>3.070</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>134.224</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>238.806</td>
</tr>
<tr>
<td>AWMA</td>
<td>7.124</td>
</tr>
<tr>
<td>Forests of the CR. s.e.</td>
<td>12.091</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>417.410</strong></td>
</tr>
</tbody>
</table>

Source: MA
The greatest number of events, 3 investment ones and 36 non-investment ones, was ensured by the Elbe River Board corp. In the following overview we give some of the more important events:

### Under this sub-programme 229 112, 10 investment constructions and 50 non-investment events were implemented or partly finished.

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>5,182</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0</td>
</tr>
<tr>
<td>AWMA</td>
<td>1,629</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,791</strong></td>
</tr>
</tbody>
</table>

Source: MA

### ELBE RIVER Board corp.
- **Reconstruction of left-bank wall below the weir on the Elbe in Jaroměř**
  - total costs CZK 12.2 million, in 2002 CZK 3.5 million was invested in construction

### MORAVA RIVER Board corp.
- **Repair of riverbed of Oslava in Dlouhá Loučka**
  - total costs CZK 3.9 million, in 2002 CZK 2.0 million was invested

### AWMA
- **Radíkovský stream, repair of riverbed**
  - total costs CZK 2.1 million, in 2002 CZK 1.8 million was invested in construction

### Under this sub-programme, 1 investment construction and 58 non-investment events were implemented.

The largest number, 36 events, was ensured by AWMA. The most significant events were implemented by the Vltava River Board corp. We give some of the more important events in the following overview:

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>5.162</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0</td>
</tr>
<tr>
<td>AWMA</td>
<td>1.629</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,791</strong></td>
</tr>
</tbody>
</table>

Source: MA

### Table 7.1.7 Use of financial resources in sub-programme 229 112 “Rectification of consequences of flood from the year 2000” in millions of CZK

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>5.162</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0</td>
</tr>
<tr>
<td>AWMA</td>
<td>1.629</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,791</strong></td>
</tr>
</tbody>
</table>

Source: MA

### Table 7.1.8 Use of financial resources in sub-programme 229 113 “Rectification of Consequences of Flood of 2002” in millions of CZK

<table>
<thead>
<tr>
<th>Owners and administrators</th>
<th>Used in 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment</td>
</tr>
<tr>
<td>Elbe River Board corp.</td>
<td>5.162</td>
</tr>
<tr>
<td>Morava River Board corp.</td>
<td>0</td>
</tr>
<tr>
<td>AWMA</td>
<td>1.629</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,791</strong></td>
</tr>
</tbody>
</table>

Source: MA

### VLTAVA RIVER Board corp.
- **Vltava, km 239.624-240.500, pool of Jiráskův weir, removal of failed embankment, repair to reinforcements**
  - total costs CZK 12.6 million, in 2002 CZK 10.6 was invested in construction
- **Vltava, km 241.725-242.390, area upstream of Trilčův weir, removal of failed embankment, repair to reinforcements**
  - total costs CZK 19.2 million, in 2002 CZK 11.3 million was invested in construction
- **Oslava in Plzeň, km 0.650-4.100, removal of failed embankment, repair to reinforcements, transverse and stabilisation objects**
  - total costs CZK 49.5 million, in 2002 CZK 9.6 million was invested in construction
- **Water-management structure Vrané, repair to collapsed right bank downstream of hydroelectric power plant**
  - total costs CZK 29.5 million, in 2002 CZK 16.0 million
- **Repair to right bank of upper canal Dolánka, removal of collapsed embankment and repair to reinforcements**
  - total costs CZK 15.3 million, in 2002 CZK 9.0 million was invested in construction

### ELBE RIVER Board corp.
- **Smědá, Předlínce - Mínikovy, km 10.500-15.220, removal of sediment and repair of embankment failure**
  - total costs CZK 3.0 million, in 2002 CZK 3.0 million was invested in construction
- **Elbe, Dolní Berštejn - Mělník, removal of sediment**
  - total costs CZK 6.5 million, in 2002 CZK 5.0 million was invested in construction

### MORAVA RIVER Board corp.
- **Dyjskomlenský raceway, reconstruction of right-bank dike**
  - total costs CZK 2.6 million, in 2002 CZK 2.6 million was invested in construction

### AWMA
- **Rectification of flood damage in the district of Klatovy**
  - total costs CZK 9.8 million, in 2002 CZK 2.3 million was invested in construction
- **Rectification of flood damage in the district of České Budějovice**
  - total costs CZK 4.2 million, in 2002 CZK 4.2 million was invested in construction
7.2 Financial support of the Ministry of the Environment

Programme for the revitalisation of river systems

In 2002 support for the implementation of the measures was provided in the form of a special-purpose grant in an overall amount of CZK 194,727 million.

The programme for the revitalisation of river systems (referred to hereinafter as “PRRS”) is formulated as a programme for the regeneration, stabilisation and care of the water regime in the countryside with the aim of creating conditions for the renewal of ecological stability and the sustainable use of the countryside.

The financial resources for PRRS are allocated from the budget every year. The programme is ensured by the Agency for the Protection of Nature and the Countryside. The resources are provided according to the Rules in the form of a special-purpose grant in addition to the applicant’s own resources after discussion and recommendation by regional advisory groups. Management of the Programme is entrusted to the Department of Countryside Ecology of the ME.

The overall budget of PRRS in 2002 was CZK 209,011 thousand, and the grants provided for the implementation of measures amounted to CZK 194,727 thousand. An overview of the use of financial resources in the regions and in regional competence and centres of the Agency for the Protection of Nature and the Countryside is given in the following tables 7.2.1. and 7.2.2.

Since 2000 the budget of the programme has been decreasing constantly, as has the number of new events with financial support. In the year 2002, CZK 194,727 thousand was used for 179 events, and in 2002, CZK 134,974 thousand was used for 99 unfinished events, and CZK 59,753 thousand was used for 80 events started in 2002.

The greatest volume of financial resources was expended on events where the grant was from CZK 2 to 5 million.

### Table 7.2.1 Use of financial resources of PRRS in the years 2001 and 2002 according to region

<table>
<thead>
<tr>
<th>Region / year</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Unfinished events</td>
</tr>
<tr>
<td></td>
<td>number</td>
<td>CZK thou.</td>
</tr>
<tr>
<td>Central Bohemia</td>
<td>38</td>
<td>58,674</td>
</tr>
<tr>
<td>South Bohemia</td>
<td>25</td>
<td>26,456</td>
</tr>
<tr>
<td>Pilsen</td>
<td>26</td>
<td>23,527</td>
</tr>
<tr>
<td>Karlovy Vary</td>
<td>3</td>
<td>4,092</td>
</tr>
<tr>
<td>Ústí</td>
<td>14</td>
<td>27,233</td>
</tr>
<tr>
<td>Liberec</td>
<td>3</td>
<td>1,045</td>
</tr>
<tr>
<td>Královéhradecky</td>
<td>20</td>
<td>14,673</td>
</tr>
<tr>
<td>Pardubice</td>
<td>15</td>
<td>12,859</td>
</tr>
<tr>
<td>Vysocina</td>
<td>21</td>
<td>14,941</td>
</tr>
<tr>
<td>South Moravia</td>
<td>14</td>
<td>16,846</td>
</tr>
<tr>
<td>Olomoucky</td>
<td>20</td>
<td>14,252</td>
</tr>
<tr>
<td>Zlín</td>
<td>9</td>
<td>11,240</td>
</tr>
<tr>
<td>Moravia-Silesia</td>
<td>9</td>
<td>13,921</td>
</tr>
<tr>
<td>Total</td>
<td>219</td>
<td>239,759</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M.

### Table 7.2.2 Use of financial resources of PRRS in the years 2001 and 2002 according to centres APNC

<table>
<thead>
<tr>
<th>APNC /Year</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Unfinished events</td>
</tr>
<tr>
<td></td>
<td>number</td>
<td>CZK thou.</td>
</tr>
<tr>
<td>Brno</td>
<td>20</td>
<td>23,772</td>
</tr>
<tr>
<td>České Budějovice</td>
<td>25</td>
<td>26,456</td>
</tr>
<tr>
<td>Havlíčkův Brod</td>
<td>23</td>
<td>15,641</td>
</tr>
<tr>
<td>Olomouc</td>
<td>22</td>
<td>15,251</td>
</tr>
<tr>
<td>Ostrava</td>
<td>12</td>
<td>18,235</td>
</tr>
<tr>
<td>Pardubice</td>
<td>34</td>
<td>34,745</td>
</tr>
<tr>
<td>Plzeň</td>
<td>30</td>
<td>25,372</td>
</tr>
<tr>
<td>Prague</td>
<td>26</td>
<td>57,974</td>
</tr>
<tr>
<td>Ústí nad Labem</td>
<td>17</td>
<td>22,113</td>
</tr>
<tr>
<td>Total</td>
<td>219</td>
<td>239,759</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M.
The greatest number of events was implemented with grants up to CZK 500,000.

Budgetary organisations can receive a grant in a maximum amount of CZK 100% of the total costs of investments, municipalities up to 80% and others up to a maximum of 70% of costs depending on the type of measures. The ME will decide on exceptions at the recommendation of the Advisory group of the ME.

There is a slight predominance of natural and legal persons in the number of financed applications and in the volume of support. In terms of use of grants, the ratio of applicants in the individual groups was relatively balanced. In comparison with the previous year, the proportion of budgetary and subsidised organisations rose by approximately 20%, because the drop in the number of applications for grants for the acquisition of project documentation fell (from 16 to 7 in 2002) with lower financial demands.

The use of grants according to type of measure in 2002 is given in Table 7.2.5.

### Programme of minor water-management ecological events

The programme of minor water-management ecological events (referred to hereinafter as “PMWME”) is ensured by the Ministry of the Environment (Department of Countryside Ecology) in cooperation with the Ministry of Finance. The aim is to improve the environment in the form of support for treatment of waste water in smaller municipalities linked with landscape-forming programmes and a comprehensive approach to dealing with the ecological stability of the territory. PMWME focuses on municipalities which cannot resolve their problems with the treatment of waste water via the State Environmental Fund or the Ministry of Agriculture. It is intended for municipalities with less than 2000 equivalent inhabitants. The overall volume of financial resources of the PMWME for 2002 came to CZK 187,052 million, and it supported 70 events.

#### 7.3 State environmental fund

The State Environmental Fund (referred to hereinafter as the “SEF”) provides support to municipalities for protection of water under declared programmes (in particular for measures at sources of pollution) in the form of a grant, loan and contribution for partial payment of interest.

In 2002, the support of the SEF in the area of water reached CZK 1,973.405 million (grants CZK 1,369.798 million, loans CZK 603.607 million), and as a result of the flood situation it was 23% higher than in the previous year.

By the end of 2002, 154 applications had been registered in the field of water protection, and 76 had been registered for support from the Renewal Programme (dredging, drying, cleaning) or construction of sewerage systems and waste water treatment plants on territories affected by the flood.

On the basis of Resolution of the Government No. 149 of the date 14. 2. 2001, the SEF is the implementation agency for the implementation of the ISPA instrument. The priority of this EU instrument is primarily support for measures in the water-management area, in particular the handling of waste water. Grants of CZK 10,156 thousand were provided for the joint financing of ISPA programmes in 2002 from the resources of SEF for 13 projects in the field

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**Table 7.2.3 Number of applications according to level of grants released in 2002**

<table>
<thead>
<tr>
<th>Level of grant</th>
<th>Event</th>
<th>Grants</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 500</td>
<td>61</td>
<td>34.1</td>
<td>18,966</td>
</tr>
<tr>
<td>501 to 1000</td>
<td>58</td>
<td>32.4</td>
<td>46,678</td>
</tr>
<tr>
<td>1001 to 2000</td>
<td>39</td>
<td>21.3</td>
<td>53,528</td>
</tr>
<tr>
<td>2001 to 5000</td>
<td>18</td>
<td>10.0</td>
<td>54,120</td>
</tr>
<tr>
<td>More than 5000</td>
<td>3</td>
<td>1.7</td>
<td>21,435</td>
</tr>
<tr>
<td>Total</td>
<td>179</td>
<td>100.0</td>
<td>194,727</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M.

**Table 7.2.4 Number of events and level of grant according to type of applicant in 2002**

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Number of events</th>
<th>Grants (CZK thous.)</th>
<th>Average level of grant (CZK thous.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipalities and cities</td>
<td>57</td>
<td>62,332</td>
<td>1,094</td>
</tr>
<tr>
<td>Natural and legal persons</td>
<td>68</td>
<td>70,000</td>
<td>1,094</td>
</tr>
<tr>
<td>Budgetary and subsidised organisations:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCHKO</td>
<td>6</td>
<td>4,764</td>
<td>794</td>
</tr>
<tr>
<td>APNC</td>
<td>8</td>
<td>16,682</td>
<td>1,854</td>
</tr>
<tr>
<td>ANMA</td>
<td>5</td>
<td>30,641</td>
<td>929</td>
</tr>
<tr>
<td>Forests of the CR, s.e.</td>
<td>3</td>
<td>8,190</td>
<td>2,730</td>
</tr>
<tr>
<td>NP Podyjí</td>
<td>14</td>
<td>768</td>
<td>536</td>
</tr>
<tr>
<td>Otře River Board corp.</td>
<td>1</td>
<td>1,094</td>
<td>1,094</td>
</tr>
<tr>
<td>Odra River Board corp.</td>
<td>7</td>
<td>186</td>
<td>186</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>62,325</td>
<td>1,154</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M.

**Table 7.2.5 Types of measures supported from PRRS in 2002**

<table>
<thead>
<tr>
<th>Type of measures</th>
<th>Number of measures</th>
<th>Grants CZK thous.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a – revitalisation of natural function of watercourses</td>
<td>30</td>
<td>24,978</td>
</tr>
<tr>
<td>b – establishment and revitalisation of elements of system of ecological stability linked with the water regime</td>
<td>12</td>
<td>22,062</td>
</tr>
<tr>
<td>c – revitalisation of retention capacity of the countryside</td>
<td>125</td>
<td>133,949</td>
</tr>
<tr>
<td>d – reconstruction of technical elements and dredging of production fishponds</td>
<td>2</td>
<td>9,168</td>
</tr>
<tr>
<td>e – construction of root water treatment plants, establishment of artificial wetlands</td>
<td>2</td>
<td>1,934</td>
</tr>
<tr>
<td>f – removal of transverse barriers on watercourses</td>
<td>1</td>
<td>684</td>
</tr>
<tr>
<td>g – project documentation, preparation for implementation</td>
<td>7</td>
<td>1,953</td>
</tr>
</tbody>
</table>

Source: ME, VÚV T.G.M.
of water protection in a total amount of CZK 162,041 thousand.

Some of the most significant recipients of support from the aspect of the resources released up to the end of 2002 were the city of Klatovy, which was given support in the amount of CZK 55.3 million for the reconstruction and modernisation of a WWTP (of this, grant of CZK 5.2 million and loan of CZK 50.1 million), the Water Supply System and Sewerage System of the Federation of Municipalities with its headquarters in Třebíč for the intensification of the WWTP in a total amount of CZK 37.1 million (grant CZK 8.6 million, loan CZK 28.5 million) and municipality of Moravany for a sewerage system in the total amount of CZK 26.9 million (grant CZK 19.6 million, loan CZK 7.3 million). The support given by SEF in the field of water in 2002 is given by Table 7.3.1.

### 7.4 Financial support from international sources

In 2002 many investments of a water-management nature were supported from foreign sources. Last year almost EURO 12.654 million was paid out from the funds PHARE – CBC and PHARE – LSIF for water-management events (more than CZK 392.0 million). EURO 4,067.170 thousand was provided under the programme PHARE – LSIF for the reconstruction of the sewerage system in Brno (approximately CZK 126.0 million). A total of EURO 7.6 million was provided from the programme PHARE – CBC for projects focussing on the removal and cleaning of waste water (approximately CZK 23.5 million). This was used to support, for example, the following events Třebíč – expansion of WWTP - EURO 2.665 million (approximately CZK 82.6 million), region Vlára – building of sewerage system and alteration of WWTP – EURO 1.150 million (CZK 35.65 million), Klatovy – reconstruction of WWTP - EURO 2.025 million (CZK 62.775 million), Mariánské Lázně – sewerage system – EURO 1.655 million (CZK 51.305 million), and EURO 93.1 thousand (approximately 2.9 million CZK) was given for a waste water treatment plant and sewerage system in Břeclav.

All events were co-financed from national sources (own sources of investors and support from state budget).

Under the PHARE 2000 programme, many events were implemented in northern Bohemia and in the Moravian-Silesian Region (NUTS II) for EURO 900.0 thousand (almost CZK 28.0 million), and an ecological improvement of the Ohře and the Elbe costing EURO 98.5 thousand (more than CZK 3.0 million) was financed from the fund PHARE - CBC.

Out of the events implemented under the Programme of Small Infrastructure projects it is possible to mention the channelling of sewerage in the municipality of Kostomlaty pod Milešovkou implemented in the amount of EURO 211.86 thousand, to which the Czech Republic contributed EURO 52.97 thousand and PHARE contributed EURO 158.89 thousand. The reconstruction of the inspection sewer shafts and pumping station in the municipality of Babylon required a total of EURO 45.29 thousand, to which the Czech Republic contributed only EURO 11.32 thousand, and the remaining amount was paid from the PHARE fund.

Resources from the loans of the European Investment Bank used for support of construction of water supply systems, water treatment plants, sewerage systems and waste water treatment plants have virtually trebled since 2001, because last year a total level of CZK 616.0 million of them were implemented. The financial resources intended for flood prevention from national sources in the amount of CZK 2.15 billion were augmented by a loan from the European Investment Bank in the amount of EUROS 60 million. Using these national and foreign sources, in the year 2002 – 2005, it was possible to ensure financing for the programme 229 060 “Flood Prevention”.

### Table 7.3.1 Total support of SEF given in 2002

<table>
<thead>
<tr>
<th>Subject of support</th>
<th>Grants</th>
<th>Loan</th>
<th>Total support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CZK thous.</td>
<td>Proportion (%)</td>
<td>CZK thous.</td>
</tr>
<tr>
<td>Entrepreneurial subjects – legal persons</td>
<td>8 662</td>
<td>0.6</td>
<td>21 197</td>
</tr>
<tr>
<td>Entrepreneurial subjects – natural persons</td>
<td>0</td>
<td>0</td>
<td>847</td>
</tr>
<tr>
<td>Civic associations</td>
<td>27 290</td>
<td>2.0</td>
<td>5</td>
</tr>
<tr>
<td>Churches</td>
<td>62</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-profit-making and similar organisations</td>
<td>22 857</td>
<td>1.7</td>
<td>5 895</td>
</tr>
<tr>
<td>State budget</td>
<td>21 216</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>Municipalities</td>
<td>1 191 492</td>
<td>87.0</td>
<td>505 310</td>
</tr>
<tr>
<td>Regions</td>
<td>3 539</td>
<td>0.3</td>
<td>0</td>
</tr>
<tr>
<td>Public budget</td>
<td>94 680</td>
<td>6.9</td>
<td>70 353</td>
</tr>
<tr>
<td>Subsidised organisations</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Established organisations</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1 369 798</td>
<td>100</td>
<td>603 607</td>
</tr>
</tbody>
</table>

Source: SEF, VÚV T.G.M.
8.

LEGISLATIVE INSTRUMENTS


By the adoption of Act No. 76/2002 Coll., Concerning Integrated Prevention, and Act No. 320/2002 Coll., Concerning the Amendment And Repeal of Certain Acts in Relation to the Termination of the Activity of District Authorities, the Water Act was amended. The amendment of Water Act and the Water Supply Systems and Sewerage Systems Act was implemented only by Act No. 320/2002 Coll.

8.1 Amendment to Water Act

In the course of 2002, Act No. 254/2001 Coll., Concerning Water and Amendments to Certain Acts (the Water Act) was amended by Act No. 76/2002 Coll. and Act No. 320/2002 Coll.

Act No. 76/2002 Coll., Concerning the Integrated Prevention and Limiting of Pollution, Concerning the Integrated Pollution Register and Concerning the Amendment of Certain Acts (Integrated Prevention Act) removes decisions according to section 8 paragraph 1, section 16 paragraph 1, section 17 paragraph 1, section 36, 37, section 39 paragraph 2 letter a) and expressions according to section 18 paragraph 1 of the Water Act for defined equipment into the competence of the Integrated Prevention Act for proceedings concerning the issue of an integrated permit for which the administrative authority is the regional authority (with the exception of facilities the operation of which could have a significant cross-border impact on the environment, where the administrative authority is the ME). An integrated permit is a decision which designates the conditions for the operation of facilities, including the operation of activities directly associated with the operation of facilities on site, and which is issued instead of decisions, opinions, expressions and consents issued according to special legal regulations in the area of environmental protection, public health protection and in the area of agriculture, if these regulations allow it. Facilities defined in the Integrated Prevention Act are, according to section 2 paragraph a) a technical unit and technological unit shown in Appendix No. 1 to this act or set of related technical and technological units in a single operation if at least one of these units is given in Appendix No. 1 to this act, and if they are not units used for research, development and testing of new products and processes; other technical units and technological units or a set thereof not shown in Appendix No. 1 to this act shall be considered to be facilities if the operator of the equipment requests the issue of an integrated permit for them.
Act No. 320/2002 Coll., Concerning the Amendment and Repeal of Certain Acts in Relation to the Termination of Activity of District Authorities as Part of the Next Stage of Reform of Public Administration, has significantly changed the exercise of state administration in the area of water management. On 1st January 2003, a large part of the competence of first-instance water authorities passed from the environmental departments of the district authorities to 205 municipalities with expanded competence. Certain selected competences from the aspect of greater territorial extent during decision making also passed to regional authorities. This involves competence being expanded to include another 11 activities by which the provisions of section 107 of the Water Act were augmented.

With regard to the amended Water Act already referred to, at the end of 2002 the MA prepared the second publication of the Water Act with a commentary containing the annotated full wording of Act No. 254/2001 Coll., Concerning Water and Concerning the Amendment of Certain Acts (the Water Act), as subsequently amended, as of 1st January 2003, augmented to include accompanying legal regulations issued up to the end of 2002, also with a commentary. In the context of assistance to lower state administrative bodies in water management at water authorities, the MA provided this publication to all water authorities – municipal authorities of municipalities with authorisation from a municipal authority, municipal authorities of municipalities with expanded competence, and regional authorities, including the City Council of the capital Prague.

### 8.2 Amendment to Act Concerning Water Supply Systems and Sewerage Systems for Public Need

- In the course of the year 2002 Act No. 274/2001 Coll., Concerning Water Supply Systems and Sewerage Systems for Public Need and Concerning the Amendment of Certain Acts, was updated by Act No. 320/2002 Coll.

Act No. 320/2002 Coll., Concerning the Amendment and Repeal of Certain Acts in Relation to the Termination of Activity of District Authorities as Part of the Next Stage of Reform of Public Administration, significantly changed the exercise of state administration in the field of water management. On 1st January 2003 the first-instance water authorities were abolished and replaced with first-instance water authorities at 205 municipal authorities of municipalities with expanded competence. The one significant change where the competence of abolished water authority did not pass to the municipal authority of a municipality with expanded competence is the imposition of fines on owners and operators of water supply and sewerage systems pursuant to section 32 of the relevant act, and this is because many municipalities with expanded competence are themselves owners and operators of water supply and sewerage systems.


### 8.3 Accompanying regulations for Water Act

- In the year 2002, the preparation and issue of accompanying regulations according to the authorisation in the Water Act continued.

Last year these accompanying regulations were published in the Collection of Acts of the Czech Republic:

- Decree No. 20/2002 Coll., Concerning the Method and Frequency of Measuring the Amount and Quality of Water,
- Decree No. 195/2002 Coll., Concerning the Particulars of the Handling Rules and Operational Rules of Water Structures,
- Decree No. 225/2002 Coll., Concerning the Detailed Definition of Structures for Water-Management Reclamation Lands and the Parts Thereof and Method and Scope of Care Thereof,
Decree No. 236/2002 Coll., Concerning Method and Scope of Preparation of Proposal and Designation of Flood Territories,

Decree No. 241/2002 Coll., Concerning Designation of Reservoirs and Watercourses on which Vessels with Combustion Engines are Forbidden and Concerning the Scope and Conditions of Use of Surface Water for Navigation,

Decree No. 292/2002 Coll., Concerning River Basin Areas.

Decree No. 293/2002 Coll., Concerning Charges for the Discharge of Waste Water into Surface Water


According to the authorisation in section 37 paragraph 2 of the Water Act, in the Bulletin of the ME No. 2/2002, the ME issued Methodological Instruction No. 1 of the Water Protection Department of the ME for the designation of the minimum level of groundwater.

Preparation also continued on many other accompanying regulations, which are gradually being declared in 2003:

Decree Concerning Water Records (No. 7/2003 Coll.), which as of 1st July 2003 cancels decree No. 126/1976 Coll., (Concerning Water-management Records and Overall Water-management Records,

Order of the Government Concerning Indicators and Values of Permissible Pollution of Surface Water and Waste Water, Particulars of Permit for Discharge of Waste Water into Surface Water and into Sewerage Systems and Concerning Sensitive Areas (No. 61/2003 Coll.),

Order of the Government Concerning Designation of Surface Water Suitable for the Life and Reproduction of Native Fish Species and Other Water Creatures and Concerning the Ascertaining and Evaluation of the State of the Quality of this Water (No. 71/2003 Coll.),

Order of the Government Concerning the Designation of Vulnerable Areas and Concerning the Use and Storage of Fertilizers and Yard Manure, Crop Rotation and the Carrying Out of Anti-Erosion Measures in These Areas (No. 103/2003 Coll.),

Decree Concerning Records of the State of Surface Water and Groundwater and the Method of Inputting Data into the Information System of Public Administration (No. 139/2003 Coll.), according to section 21 paragraph 2,

Decree Concerning Planning in the Area of Water (No. 140/2003 Coll.), According to section 24 paragraph 3, section 25 paragraph 4 and section 26 paragraph 5,

Decree Concerning Particulars of Emergency Plan and Handling of Noxious Substances Pursuant to section 39 paragraph 8.

The following methodological instructions were prepared for the activity of water authorities, administrators of watercourses and users of water in 2002:

Methodological Instruction of the MA Concerning the Procedure When Designating the Uncharged Amount of Water Abstracted in Order to Balance the Irrigation Deficit of Agricultural Crops,

Methodological Instruction of the MA For Compilation of Water-management Balance of River Basin Area,

Methodological Instruction of the ME and MA for Evaluation of Request for Exemption from the Provisions of section 39 paragraph 1 of Act No. 254/2001 Coll., Concerning Water and Concerning Amendments to Certain Acts (the Water Act, as Subsequently Amended, for the Use of Noxious Substances for Feeding Fish [section 39 paragraph 7 letter b) of the Water Act] and for the Treatment of Surface Water in Reservoirs Intended for Fish Farming [section 39 paragraph 7 letter d) of the Water Act],

Methodological Instruction for Carrying Out Water Supervision of Water Authorities in the Competence of the MA,

Methodological Instruction of the MA for the Treatment, Maintenance and Protection of Vegetation on Embankment Dams of Small Reservoirs During Their Construction, Construction Alterations, Repairs and Operation,
8. Legislative Instruments

- Methodological Instruction of the MA for Carrying Out Technical-Safety Supervision on Dikes of Small Reservoirs of the IV Category.
- Methodological Instruction of the MA for Submission and Circulation of Documents and Documentation as Part of Handling Designated State Assets which river board corporations have a right to manage.
- Methodological Instruction of the MA for Submission of Documents when Handling State Assets, i.e., Land, Buildings and their Appurtenances, which the AWMA is competent to manage.

8.4 Accompanying and internal regulations for Act Concerning Water Supply Systems and Sewerage Systems for Public Need


In the course of the year 2002, in connection with Act No. 274/2001 Coll., Concerning Water Supply Systems and Sewerage Systems for Public Need and Concerning the Amendment of Certain Acts, the following methodological instructions have been prepared for the activity of water authorities, regional authorities, owners of water supply systems and sewerage systems, operators of water supply systems and sewerage systems and processors of Plans for the development of water supply systems and sewerage systems on the territory of a region:

- Methodological Instruction of the MA ref. No.: 10535 of the date 2nd May 2002 For Designating the Optimum Size of an Invoice Water Meter and Profile of Water Connection,
- Methodological Instruction of the MA ref. No.: 10689 of the date 2nd May 2002 for Issuing a Permit for Operating a Water Supply System,
Methodological Instruction of the MA ref. No.: 10532 of the date 31st May 2002 for Plan of Quality Control in the Course of the Production of Drinking Water and Plan of Control of Level of Pollution of Waste Water.

Methodological Instruction of the MA ref. No.: 10534 of the date 2nd July 2002 for Processing Plan of Development for Water Supply Systems and Sewerage Systems of Region.

Methodological Instruction of the MA ref. No.: 20494 of the date 11th July 2002 for Calculation of Acquisition Price of Structure According to Orientation Indicators for Selected Data of Asset Records of Water Supply and Sewerage Systems.

Methodological Instruction of the MA ref. No.: 29192 of the date 11th September 2002 for Processing Selected Data from the Asset Records of Water Supply Systems and Sewerage Systems, and

Methodological Instruction of the MA ref. No.: 29193 of the date 11th September 2002 for Processing Selected Data from the Operational Records of Water Supply Systems and Sewerage Systems.

8.5 Inspection of exercise of state administration

On the basis of government resolution No. 1030 of the date 10th October 2001, the department of state administration in water management of the MA prepared a plan for inspection activities and carried out inspections of the exercise of state administration in the section of water management in the statutory competence of the MA.

In the course of 2002, the Regional Authority of the Ústí nad Labem region (environment and agriculture department) was inspected, in February, in March the Regional Authority of the Olomouc region (environment and agriculture department) was inspected, in May the Regional Authority of the Hradec Králové region (environment and agriculture department) was inspected, in September the Regional Authority of the Central Bohemia region (environment and agriculture department) was inspected.

During the inspections of the exercise of state administration in water management, in none of the regional authorities inspected were fundamental errors or serious shortcomings which would have lead to the imposition of remedial measures, including any follow-up inspections, discovered by employees of the MA department of state administration in water management.

From the results of the inspections it is evident that the approach of the individual regional authorities to the establishment of environment departments was mixed at the start of 2001. Dealing with the matter of how to fulfil the new provisions of Act No. 254/2001 Coll., Concerning Water and Concerning the Amendment of Certain Acts (the Water Act), as subsequently amended, and Act No. 274/2001 Coll., Concerning Water Supply Systems and Sewerage Systems for Public Need (the Water Supply Systems and Sewerage Systems Act) in the intentions of the individual regions meant that departments were established with differing preferential activities and varying requirements for the number and qualification of employees in these local departments for water management were defined.

But it is possible to state that following the initial searching for optimum models and approaches, there was a profiling of departments on the part of all regional authorities and a reinforcing of the significance of departments which have water management in their job description. The administration of appeals against decisions of district authorities was gradually managed, and now it works smoothly and usually within the prescribed time limits.

During inspections of the exercise of state administration at all regional offices it was discovered that environment departments, or environment and agriculture departments, also handle without difficulty the work which has been entrusted to them by the Water Act and the Water Supply Systems and Sewerage Systems Act, which came into effect on 1.1. 2002.

One common element at all the inspected regional authorities was the small or non-existent number of inspections carried out under the provisions of section 110 of the Water Act – water supervision of water authorities.

In all the regional authorities inspected the MA recommended an increase in the number of inspections of the exercise of state administration for bodies of the first degree. It also stressed the necessity to focus on methodological and supervision activity for municipalities with expanded competence in the following year.

As part of the inspection and supervision activity of supreme water supervision in the administration of the ME implemented by the individual departments of exercise of state administration, in 2002 37 supervision events were carried out in water protection. A timetable for inspections of the exercise of state administration in the competence of ME for the year 2002 was also planned and approved.
9.

INTERNATIONAL RELATIONS

9.1 International cooperation on border waters

In 2002 international cooperation continued on border waters with Germany, Austria, Poland and Slovakia.

On 25th and 27th September 2002, the 5th meeting of the Czech-German Commission for Border Waters was held (the Commission). This discussed the results of the two meetings of the Standing Committee for the Bavarian Border Section, held after the 4th meeting of the Commission in October 2001 and in April 2002, and the Standing Committee for the Saxony border section held in June 2002. It dealt with the preparation of joint fundamentals for the individual areas of cooperation on border waters, in particular the “Fundamentals for the Planning, Preparation and Carrying out of Water-Management Measures and Maintenance of Watercourses, and the Construction, Operation and Maintenance of Water-Management Equipment”, the “Fundamentals for the Valuation of Work, Performances and Supplies and the Joint Adoption and Mutual Billing of Water-management Measures Carried out on Border Watercourses”, the “Fundamentals for the Monitoring of the Quality and Amount of Water and for the Evaluation and Exchange of Results”, the “Fundamentals for Coordination of Administrative Proceedings on Border Waters” and the “Fundamentals for Direct Cooperation of the Relevant Bodies and Specialist Offices”. The Commission also deals with tasks associated with its participation during the implementation of the Outline Directive, updating of the Directives for the Warning Service on Border Waters, questions of the supply of water and discharges of waste water and care for the quality of water, the issue of hydrology and other matters mostly from the period of 2001. The Czech party informed the Austrian party of the intention to prepare a new agreement for cooperation on border waters between the Czech Republic and Austria that takes into account the modern principles of water protection expressed in the Treaty on the Protection and Use of Border Waters and International Lakes and in the Outline Directive of the EU concerning Water.

In 2002 on the dates 11th – 15th November the 4th meeting was held of the representa-
tives of the governments of the Czech Republic and Poland for cooperation on border waters. At the meeting agreement was not reached in the matter of preserving the meander on the Odra in Bohumín-Chalupki. Despite its extraordinary ecological value, the Polish party considers this meander to be flood damage from 1997, and for this reason it requires its elimination.

Within the framework of the hydrology, hydrogeology and flood protection group, an expert group is working for the area of the mine Turów. In cooperation with hydrologists and hydrogeologists from the Polish side, it has not been possible to prove that the groundwater in this area flows from the Czech Republic to Poland and not the other way around, as was originally assumed. After the completion of the balance planned for this year, the Polish party may be handed a request for a solution (or compensation for damage) to the massive drop in the level of groundwater caused by the operation of the mine Turów. In 2001 work was initiated on the preparation of a new Agreement between the Government of the Czech Republic and the Government of Poland on Cooperation on Border Waters (Agreement). The Agreement should replace the now unsatisfactory Treaty between the Government of the Czechoslovak Republic and the Government of the People's Republic of Poland concerning Water Management on Border Waters from the year 1958. Expert negotiations on this Agreement were held in 2002 on 23rd – 25th April in Poland and on 30th September to the 2nd of October in the Czech Republic.

The planned meeting of the Czech-Slovak Committee for Border Waters (Committee) did not take place in 2002 as a result of personnel changes in Slovakia and the late appointment of the representative for border waters with the Czech Republic. Despite this, the tasks arising from the Protocol of the 2nd meeting of the Committee in December 2001 were performed on an ongoing basis, both at the level of the representatives by means of correspondence and within the context of the working groups. In order to ensure the work of the working groups for technical matters, hydrology and water protection, immediately after the 2nd meeting of the Commission the members of these groups were appointed. In the course of the year the working groups dealt with activities arising from their work plans, primarily technical measures relating to border waters, including matters associated with the August flood, joint measuring on border waters, mutual exchange of information about them and the preparation of basic documents (directives and fundamentals) essential for the activity of working groups.

9.2 Regional cooperation in the river basins of the Elbe, the Odra and the Danube and Treaty on the Protection and Use of Border Watercourses and International Lakes

The Czech Republic has been a party to the Treaty on the Protection and Use of Border Watercourses and International Lakes (referred to hereinafter as the “Treaty”) since May 2000.

In 2002, Czech specialists participated in the negotiations of the working groups for water management, monitoring and evaluation. Under the Treaty, work continued on the pilot project Morava as part of the international project for the verification of Directives EEC/UN for the monitoring and evaluation of water quality in border watercourses. In cooperation with the Slovak party the report “Recommendation for Monitoring and Evaluation of Border Waters in the Morava River Basin” was prepared. The representatives of the Czech Republic also participated actively in the preparation of the “Protocol concerning Civil Liability and Compensation for Damages Caused by the Effects of Industrial Accidents to Waters Going Beyond State Borders”, which is prepared under this Treaty and the Treaty Concerning Cross-Border Influences of Industrial Accidents.

In cooperation with the World Health Organisation, the Protocol Concerning Water and Health (the Protocol) was prepared for the Treaty. This Protocol was signed in London in June 1999. Since November 2001, the Czech Republic has been a treaty partner to this Protocol. In view of the fact that the condition of its ratification by sixteen parties has not been met, the Protocol has not become valid. The administrator for the
implementation of the Protocol at a national level is the Ministry of Health in cooperation with the ME and the MA. In 2002, the working group for the preparation of goals according to article 6 of the Protocol began its work in the Czech Republic.

In the year 2002, the active participation of the Czech Republic in international commissions for the protection of the river basin of the Elbe (referred to hereinafter as the “ICPE”), the Danube (referred to hereinafter as the “ICPD”) and the Odra (referred to hereinafter as “ICPO”) began.

In view of the demanding task of implementation of the Outline Directive of the EU concerning water (referred to hereinafter as the “Directive”) in the international river basins of the Elbe, the Danube and the Odra via these commissions in compliance with article 3 of the Directive, the structure of the working groups in these commissions was changed in order to better fulfil this task. In 2002 the Czech Republic chaired the ICPD and the ICPO. Whereas the Czech Republic’s term as chair of the ICPD has finished, it will continue to chair the ICPO until the end of 2004. At the request of the Czech party, in January 2002 the presidents of all three commissions met in Prague. The presidents discussed approaches and problem questions of work in the commissions and decided on joint principles which it is necessary to promote.

On 21st and 22nd October 2002, the 15th meeting of the ICPE was held, to which the Magdeburg Seminar – held every two years alternately in the Czech Republic and Germany – was linked. The flood which occurred on the Elbe in August 2002 had a significant impact on the decision making of the ICPE. The “Action Programme of Flood Protection in the Elbe River Basin”, which is a part of the “Action Programme of the Elbe for the Period 1996 – 2010”, was submitted to the ICPE for approval. But on the basis of a detailed analysis of the flood of the year 2002 contained in the material “Documentation of the Flood in the Elbe River Basin in August 2002”, the ICPE decided on the necessity of updating both documents. At the same time the ad-hoc working group for the flood was replaced with a permanent working group Flood Protection, and new members were appointed. It was stated that the floods had completely destroyed the measuring stations of the ICPE Obříství, Schmilka and Zelčín. Other stations Děčín, Magdeburg and Dessau/Mulde, where there was only an electrical power cut or other minor faults, had already been put into operation.

The ICPE approved the recommendation “Fundamental Recommendations for Technical Facilities with Substances Threatening the Quality of Water” and called upon the working group for accidents to process an inventory of facilities with substances threatening the quality of water and old burden in flood areas. The results will be used in the work of the working group for floods and for the updating of the “Action Plan for Flood Protection in the Elbe Basin”. Work also began on the “International Warning and Alarm Plan for the Elbe” and on the first steps towards joint Czech-German accident exercises. To this end closer cooperation has been initiated with the experts of the Standing Committee of the Saxony Czech-German Commission for Border Waters.

The ICPE approved the “International Programme of Measuring of the ICPE for the year 2003”, which is adapted to the requirements of the Outline Directive of the EU Concerning Water and which reflects the cooperation of the ICPE with experts for the protection and improvements of water quality of the Standing Committee of the Saxony Czech-German Commission for Border Waters.

The ICPE stated that by the processing and approval of the minimum requirements for the discharge of waste water from the food processing industry, production of edible fats and oils, rendering and for surface storage of waste, the task from chapter 3.1.2. “Elbe Action Plan” was fulfilled.

The work on the processing of the further minimum requirements (systems of cooling
water, waste water from the cleaning of flue gases, chemical-physical processing of waste and the treatment of old oil, waste water from steam productions and treatment of input water for boilers) is ongoing.

On the days 28th and 29th November 2002 in Vienna, the 5th meeting of the ICPD was held. The discussion focussed on the activities of expert groups (for the prevention of accidents, monitoring and evaluation of data, emissions, management of river basins, strategic questions and ecology) in the period between the 4th and 5th meetings of the ICPD. Special attention was given to the implementation of the Outline Directive of the EU about Water in the Danube river basin. The Strategic Material of the Expert Group for the Management of River Basins was approved, as was the document of this group relating to the Economic Analysis for the Outline Directive of the EU Concerning Water Policy, and there was discussion of distribution of tasks for the fulfillment of the Outline Directive of the EU concerning Water between the individual expert groups of the ICPD. An expert sub-group was established for economics as a sub-group to the expert group for the management of river basins.

The “Report on the Joint Survey of the Danube”, “Annual Report on the Activities of the ICPD in 2001” and the yearbooks of the international monitoring networks for the year 1999 and 2000 were publish. The recommendations for the best available technology for the chemical, paper, food processing and cellulose industries were completed and translated into the national languages. The “Inventory of Sources of Emissions in the Danube River Basin” was processed, and negotiations began with the International Association of Detergent Manufacturers with the aim of negotiating a voluntary agreement about the banning of the production of detergents containing phosphor in the entire Danube river basin.

Within the framework of the expert group for ecology, an inventory of fulfilment of projects focussing on the revitalisation of wetlands contained in the “Joint Action Programme of the Danube” was processed.

In view of the fact that in 2002, the issue of floods became highly topical, an expert group for floods was formed, the task of which will primarily be to process an “Action Programme for Sustainable Flood Protection in the Danube Basin”. The ICPD approved the document “Fundamental Requirements for Facilities with Substances which Threaten Water Quality” prepared by the expert group for accident prevention, which is analogous to the material approved within the framework of the ICPE.

In 2002 there was successful work on the Regional project GEF, which serves to support the activity of ICPD and is paid for from the resources of UNDP/GEF. The activity of the DABLAS Task Force continued which brings together the representatives of Danubian states and financial institutions and donors for the support of the financing of selected priority projects.

On the days 12th to 13th December 2002, the fifth plenary meeting of the ICPO was held. The issue of introducing the Outline Directive of the EU concerning water in the international river basin of the Odra was discussed, as were the issues of mutual cooperation associated therewith, and the fundamental changes in the structure of the ICPO and their working groups were approved. The procedural questions of the functioning of the ICPO and the composition of the secretariat with the aim of ensuring its most effective operation were dealt with, applications for the granting of observer status to the organisations WWF and Bund für Umwelt und Naturschutz Deutschland were discussed, as were questions of the budget for the year 2003 and cooperation with HELCOM for the protection of the Baltic. The ICPO also discussed and approved the documents “Action Plan for Flood Protection in the Odra River Basin” and the “Macrozoobentos of the Odra” and recommended their publication. The basic documents of ICPO “Rules of Procedure” and “Fundamentals for Granting of Observer Status at ICPO for International and National Organisations” were approved.

In 2002 the ICPO issued the publications “Flood 1997”, “Evaluation of the State of Implementation of Investments Included in the Programme of Urgent Measures” and “Reporting and Flood Service in the Odra River Basin”.

### 9.3 Preparation for accession to the European Union

The requirements of the aquis communautaire in the field WATER are transposed to Czech legislation by the new Water Act, Act Concerning Water Supply Systems and Sewerage Systems and the Public Health Protection Act and their accompanying regulations. The completion of the transposition of the existing legislation of the EU, especially from the aspect of the requirements of the Directive of the European Parliament and Council 2000/60/EU setting out the framework for the activity of the Community in the field of water policy (outline directive), will be achieved by a so-called euroamendment to the Water Act, which is currently being prepared, and it is assumed that it will come into effect from 1. 1. 2004. The detailed requirements are gradually being projected into secondary legislation (decrees and government orders according to the relevant authorisations of the acts referred to). Out of the total number of 25 accompanying regulations, so far 15 titles have been issued.

The ecological approach to water which is the basis of the EU water policy is also a significant element of the environmental policy of the Czech Republic and is formulated in the State Environmental Policy. In compliance with the outline directive, the emphasis is placed on the protection of water and associated aquatic ecosystems, ensuring
water sources for drinking, economic and recreational purposes, and the amelioration of the effects of flood and drought.

The process of direct negotiations between the European Union and the Czech Republic on chapter 22, the Environment, which also included the sub-area of Water Quality, was provisionally closed and the final revised Joint Position of the European Union on this Chapter was published on 26. 11. 2002. The European Union accepted three transitional periods in the area of the environment for the Czech Republic. In the field of WATER there is one transitional period for the implementation of directive 91/271/EEC concerning the treatment of municipal waste water.

The transitional period is granted up to the end of the year 2010 for the fulfilment of certain requirements of the directive, in particular for the construction of sewerage systems and municipal waste water treatment plants in agglomerations in the size category of 2,000 – 10,000 equivalent inhabitants and for the intensification (removal of nitrates and phosphorous) of municipal waste water treatment plants for agglomerations above 10,000 EI in so-called sensitive areas.

An updated Strategy for the Financing of Implementation of Directive 91/271/EEC Concerning the Treatment of Municipal Waste Water a part of which is also the timetable of construction of waste water treatment plants, was approved by the government in December 2002, and total costs were estimated at CZK 80 billion.

In connection with the implementation of the directive 91/271/EEC concerning the treatment of waste water, by means of government order No. 61/2003 Coll., the Czech Republic declared the entire territory of the state a sensitive area from the aspect of quality of surface water.

In the economic area, in the year 2002 the government approved the updating of the strategy of financing for implementation of the directive for protection of water from pollution by nitrates from agricultural sources, where the overall costs were estimated at CZK 6 billion.

By the date of entry of the programme the Czech Republic will start measures for the implementation of directives, the implementation of which in practice will take some time after the date of accession. For directives concerning dangerous substances, the requirements of directives of the EU should be met by the date of access, and the relevant programmes of measures should be implemented by the end of the year 2009. According to the requirements of the directive concerning the protection of water from pollution by nitrates from agricultural sources and corresponding order of the government No. 103/2003 Coll., the programmes of measures will be valid from 1st January 2004, with implementation by the end of 2007. For the directive concerning drinking water, all the quality requirements which ensure that there is no potential threat to human health must be fulfilled by the date of accession.

In connection with the process of approximation, the Implementation Plan was updated for the area of the environment. For the individual directives, the remaining transposition and implementation tasks were summarised and the dates for the individual steps were designated, as were the responsible subjects. An estimate was also made of the costs and personnel needs associated with the implementation of directives in the area of the environment. One of the initial documents for the introduction of the outline directive in the Czech Republic is the Implementation Plan of the Directive, which is processed as part of the activities of the Interdepartmental Working Group for the approximation of directives of the EU in the area of water in cooperation with the departments of the ME and MA. The plan contains a list of basic requirements of the directive with the designation of detailed individual steps, dates and responsibilities for their performance. The gradual steps are designated in such a way that in the year 2006 a time plan will be published for the processing of a draft of the first plan for the river basin for discussion with the public, in the year 2009 plans of the river basins are published with relevant programmes of measures, and in 2012 programmes of measures are introduced in such a way that in 2015 the required improvement in the water state is achieved. In the following two planned cycles, measures are to be adopted and the achieved state of river basins is to be evaluated, and the relevant plans of the river basins and programmes of measures should be updated in order that in 2007 the aims of the directive are definitively attained.

Following on from the Phare twinning project “Implementation Strategy in the Area of Water in the Czech Republic”, which was terminated in April 2002, in May 2002 a new Phare twinning project was started focussing on the implementation of the outline directive which is to support the process for the implementation of this important directive of the EU in the area of the protection of water. A consortium of Great Britain, France and Austria is cooperating on the project, and it should run until January 2004.
10.
FISHERIES AND FISHPOND MANAGEMENT

10.1 Fisheries and fishpond management in 2002

The disastrous floods caused significant damage to the technical state of the equipment of fishponds and to fish stocks.

2002 was an exceptional year for fisheries and fishpond management. The catastrophic floods in August affected virtually all of the southern half of Bohemia, in which fishpond management is most widespread. The August floods caused significant damage to both the technical equipment of fishponds and fish stocks. The damages suffered by stocks to small fish and eggs will have a negative impact on market production for the following two years. The damages caused to fishponds inspired state administration to increase public support for this branch. At the end of the year a new grant title had been prepared at the MA under which grants exceeding CZK 3 billion will be provided up until 2006 to improve the state of fishponds.

In 2002 there was a drop in fish production to 19.2 thousand tons from the 20.1 thousand tons in 2001, i.e., by 4.4%. The August floods played a significant role in the production drop. A greater drop in fish production last year was softened by the successful course of sales on the domestic and foreign market from the start of the year up to the August floods (in advance in the year-on-year comparison as a result of greater interest on the market).

The dominant fish continues to be carp, with more than 86% of total production. Herbivorous fish account for 5.4%, salmonid fish account for 3.9%, and the catch of tench accounts for 1.2%.

The production of freshwater fish has long exceeded the consumption in the Czech Republic, and it is sold on foreign markets. In 2002 a total of 12.0 thousand tons of freshwater fish and products thereof was exported. In 2002 a total of 30.1 thousand tons of fish was imported into the Czech Republic, and of this 185.0 tons were freshwater fish. The rest consisted of sea fish and other seafood.

Table 10.1.1 Development of production 1993 – 2002 in thousands of tons live weight

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>20.1</td>
<td>18.7</td>
<td>18.7</td>
<td>18.2</td>
<td>17.6</td>
<td>17.2</td>
<td>18.8</td>
<td>19.5</td>
<td>20.1</td>
<td>19.2</td>
</tr>
</tbody>
</table>

Source: Fisheries Association CR
Damages caused by predators in 2002 to companies involved in fish farming and fish sales federated in the Fishery Association of the Czech Republic exceeded CZK 99.5 million. Almost half of all damage was caused by the European cormorant. The common heron and Eurasian otter were responsible for damages to a lesser extent. In compliance with Act No. 115/2000 Coll., Concerning the Payment of Damages Caused by Selected Specially Protected Animals, CZK 13.5 million was paid out in damages.

Table 10.1.2 Overview of catch of market fish up to 31.12. 2002 within the Czech Republic according to place of catch

<table>
<thead>
<tr>
<th>Catch</th>
<th>t</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>From fishponds</td>
<td>18,505</td>
<td>96.33</td>
</tr>
<tr>
<td>From special facilities</td>
<td>649</td>
<td>3.38</td>
</tr>
<tr>
<td>From reservoirs</td>
<td>56</td>
<td>0.29</td>
</tr>
<tr>
<td><strong>Total catch of fish</strong></td>
<td><strong>19,210</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Fisheries Association CR

Table 10.1.3 Overview of catch of market fish as of 31.12. 2002 within the Czech Republic according to representation of species

<table>
<thead>
<tr>
<th>Catch of fish (representation of species)</th>
<th>t</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carp</td>
<td>16,596</td>
<td>86.39</td>
</tr>
<tr>
<td>Salmonid fish</td>
<td>2,338</td>
<td>3.87</td>
</tr>
<tr>
<td>tench. cisco</td>
<td>328</td>
<td>1.91</td>
</tr>
<tr>
<td>Herbivorous fish</td>
<td>1,941</td>
<td>11.42</td>
</tr>
<tr>
<td>Predatory fish</td>
<td>216</td>
<td>1.13</td>
</tr>
<tr>
<td>Thermopile fish</td>
<td>6</td>
<td>0.03</td>
</tr>
<tr>
<td>Other</td>
<td>378</td>
<td>2.01</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,210</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Fisheries Association CR

Table 10.1.4 Catches in reservations of Czech Angling Federation in years 1991 - 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Catch (thous. of)</th>
<th>Catch (t)</th>
<th>Average (kg/ha)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>2,088</td>
<td>2,107.5</td>
<td>90.3</td>
<td>31.8</td>
</tr>
<tr>
<td>1992</td>
<td>2,241</td>
<td>2,338.0</td>
<td>101.4</td>
<td>31.8</td>
</tr>
<tr>
<td>1993</td>
<td>2,169</td>
<td>2,393.5</td>
<td>103.8</td>
<td>31.8</td>
</tr>
<tr>
<td>1994</td>
<td>2,466</td>
<td>2,768.5</td>
<td>98.7</td>
<td>31.8</td>
</tr>
<tr>
<td>1995</td>
<td>2,405</td>
<td>2,767.0</td>
<td>92.5</td>
<td>31.8</td>
</tr>
<tr>
<td>1996</td>
<td>2,045</td>
<td>2,954.0</td>
<td>92.5</td>
<td>31.8</td>
</tr>
<tr>
<td>1997</td>
<td>2,093</td>
<td>3,095.5</td>
<td>96.2</td>
<td>31.8</td>
</tr>
<tr>
<td>1998</td>
<td>2,310</td>
<td>3,005.0</td>
<td>92.6</td>
<td>31.8</td>
</tr>
<tr>
<td>1999</td>
<td>2,498</td>
<td>3,093.7</td>
<td>96.9</td>
<td>31.8</td>
</tr>
<tr>
<td>2000</td>
<td>2,954</td>
<td>3,312.6</td>
<td>107.9</td>
<td>31.8</td>
</tr>
<tr>
<td>2001</td>
<td>2,546</td>
<td>3,374.5</td>
<td>109.2</td>
<td>31.8</td>
</tr>
<tr>
<td>2002</td>
<td>2,518</td>
<td>3,625.0</td>
<td>117.0</td>
<td>31.8</td>
</tr>
</tbody>
</table>

Source: Czech Angling Federation

Table 10.1.5 Catches in reservations of Moravian Angling Federation in years 1991 - 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>Catch (thous. of)</th>
<th>Catch (t)</th>
<th>Average (kg/ha)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>633</td>
<td>730.3</td>
<td>107.2</td>
<td>115.0</td>
</tr>
<tr>
<td>1992</td>
<td>728</td>
<td>802.7</td>
<td>116.2</td>
<td>113.8</td>
</tr>
<tr>
<td>1993</td>
<td>720</td>
<td>800.2</td>
<td>115.5</td>
<td>113.8</td>
</tr>
<tr>
<td>1994</td>
<td>858</td>
<td>1,013.2</td>
<td>150.6</td>
<td>107.9</td>
</tr>
<tr>
<td>1995</td>
<td>795</td>
<td>1,003.1</td>
<td>149.0</td>
<td>104.8</td>
</tr>
<tr>
<td>1996</td>
<td>706</td>
<td>898.8</td>
<td>134.3</td>
<td>91.0</td>
</tr>
<tr>
<td>1997</td>
<td>850</td>
<td>812.5</td>
<td>121.9</td>
<td>80.3</td>
</tr>
<tr>
<td>1998</td>
<td>747</td>
<td>926.8</td>
<td>124.1</td>
<td>80.3</td>
</tr>
<tr>
<td>1999</td>
<td>707</td>
<td>1,010.5</td>
<td>150.7</td>
<td>104.8</td>
</tr>
<tr>
<td>2000</td>
<td>718</td>
<td>1,148.5</td>
<td>168.9</td>
<td>100.0</td>
</tr>
<tr>
<td>2001</td>
<td>730</td>
<td>1,105.8</td>
<td>162.6</td>
<td>92.8</td>
</tr>
<tr>
<td>2002</td>
<td>708</td>
<td>1,199.8</td>
<td>175.6</td>
<td>86.0</td>
</tr>
</tbody>
</table>

Source: Moravian Angling Federation
10.2 Changes in state of fishponds in 2002

The August floods had a fundamental impact on the state of fishponds. According to provisional information 949 fishponds and reservoirs were destroyed or damaged, and the estimate for damages reached CZK 985.7 million (see Table No. 10.2.1). The MA already issued on 22.8.2002 methodological instruction ref. No. 27135B/2002-6000 for ascertaining the extraordinary damages caused by the floods to fishponds and small reservoirs in private ownership in the Czech Republic in August 2002. On the basis of this instruction a local investigation of damages was carried out at 788 fishponds where the owners had asked for one. The damages ascertained in this reached CZK 526.012 million (see Table No. 10.2.2). A total of 1,454 different types of damages were noted (see Table No. 10.2.3).

The MA established the grant programme 229-210 “Renewal, dredging and reconstruc-

tion of fishponds and reservoirs” in order to eliminate these flood damages and to in general improve the state of fishponds. But this programme started in 2003.

In 2002 the MA provided grants for the dredging of fishponds in compliance with appendix No. 10 to Act No. 490/2001 Coll., Concerning the State Budget of the Czech Republic for 2002. The MA provided grants for dredging 1,743,771 m³ of sediment from 137 fishponds, of which 41 events had been initiated and financed in 2001, and for nine events financing will be completed in the year 2003. In 2002 financial resources totaling CZK 240.1 million were expended for the dredging of fishponds, of which CZK 182.6 million came from grants.

---

### Table 10.2.1 Provisional damages following flood of 2002 reported by regional authorities according to Act No. 12/2002 Coll.

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Financial damages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[number] [%]</td>
<td>[CZK mill.] [%]</td>
</tr>
<tr>
<td>Central Bohemia</td>
<td>254</td>
<td>26.77</td>
</tr>
<tr>
<td>Ústí nad Labem</td>
<td>33</td>
<td>3.48</td>
</tr>
<tr>
<td>Písek</td>
<td>231</td>
<td>24.24</td>
</tr>
<tr>
<td>South Bohemia</td>
<td>417</td>
<td>43.94</td>
</tr>
<tr>
<td>South Moravia</td>
<td>8</td>
<td>0.84</td>
</tr>
<tr>
<td>Karlovy Vary</td>
<td>4</td>
<td>0.42</td>
</tr>
<tr>
<td>Liberec</td>
<td>2</td>
<td>0.21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>949</td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: MMR

### Table 10.2.2 Damages to fishponds ascertained by commission according to instruction of MA ref. No. 27135B/2002-6000

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Financial damages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[number] [%]</td>
<td>[CZK mill.] [%]</td>
</tr>
<tr>
<td>České Budějovice</td>
<td>207</td>
<td>26.27</td>
</tr>
<tr>
<td>Český Krumlov</td>
<td>33</td>
<td>4.19</td>
</tr>
<tr>
<td>Jindřichův Hradec</td>
<td>58</td>
<td>7.36</td>
</tr>
<tr>
<td>Písek</td>
<td>85</td>
<td>11.17</td>
</tr>
<tr>
<td>Prachatice</td>
<td>4</td>
<td>0.54</td>
</tr>
<tr>
<td>Strakonice</td>
<td>180</td>
<td>15.31</td>
</tr>
<tr>
<td>Tábor</td>
<td>101</td>
<td>12.02</td>
</tr>
<tr>
<td><strong>South Bohemia</strong></td>
<td>660</td>
<td><strong>83.76</strong></td>
</tr>
<tr>
<td>Cheb</td>
<td>2</td>
<td>0.25</td>
</tr>
<tr>
<td>Karlovy Vary</td>
<td>1</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>788</td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: MA

### Table 10.2.3 Types of damage recorded by commission when ascertaining damages

<table>
<thead>
<tr>
<th>Description of damage</th>
<th>Number of cases [number] [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Collapse in area of drainage equipment</td>
<td>22 [1.5]</td>
</tr>
<tr>
<td>2 Collapse not in area of drainage equipment</td>
<td>160 [10.3]</td>
</tr>
<tr>
<td>3 Collapse (not specified where)</td>
<td>87 [5.6]</td>
</tr>
<tr>
<td>4 Collapse of longitudinal dike</td>
<td>8 [0.5]</td>
</tr>
<tr>
<td>5 Failure of dry or water side of dike</td>
<td>190 [13.0]</td>
</tr>
<tr>
<td>6 Damage to crown of dike. damage to road</td>
<td>98 [6.7]</td>
</tr>
<tr>
<td>7 Damage to dike (not specified how). damage to slope</td>
<td>213 [14.6]</td>
</tr>
<tr>
<td>8A Seepage in dike</td>
<td>48 [3.3]</td>
</tr>
<tr>
<td>8B Damage to dike by tree being uprooted</td>
<td>25 [1.7]</td>
</tr>
<tr>
<td>9 Damage to banks. waterlogging of trees. damages to bank vegetation</td>
<td>18 [1.2]</td>
</tr>
<tr>
<td>10 Damage to diversion channels</td>
<td>38 [2.6]</td>
</tr>
<tr>
<td>11A Damage or destruction of drainage equipment</td>
<td>107 [7.3]</td>
</tr>
<tr>
<td>11B Damage to outflow channels or drainage channel</td>
<td>160 [10.3]</td>
</tr>
<tr>
<td>12 Damage to inlet object</td>
<td>18 [1.2]</td>
</tr>
<tr>
<td>13 Damage or destruction of safety spillway</td>
<td>155 [10.6]</td>
</tr>
<tr>
<td>14 Damage to paving (BP. plunge pool). damaged rock filling</td>
<td>106 [7.3]</td>
</tr>
<tr>
<td>15 Destroyed gratings</td>
<td>11 [0.7]</td>
</tr>
<tr>
<td>16A Alluvium (branches. trunks …)</td>
<td>160 [10.3]</td>
</tr>
<tr>
<td>16B Choking</td>
<td>160 [10.3]</td>
</tr>
<tr>
<td>17 Damaged raceway - feeder (sediment deposits. alluvium. waterlogged banks)</td>
<td>28 [1.9]</td>
</tr>
<tr>
<td>18 Damages to technology (fish stocks)</td>
<td>15 [0.9]</td>
</tr>
<tr>
<td>19 Damages to equipment (lighting…). damaged fencing</td>
<td>4 [0.3]</td>
</tr>
<tr>
<td>20 Damage to retaining walls</td>
<td>11 [0.8]</td>
</tr>
<tr>
<td>21 Damage to surrounding lands (covering with mud…). damage to access roads</td>
<td>17 [1.2]</td>
</tr>
<tr>
<td>22 Damaged damming and dividing object</td>
<td>24 [1.6]</td>
</tr>
</tbody>
</table>

Source: MA
11.
RESEARCH AND DEVELOPMENT IN WATER MANAGEMENT

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

In 2002 specific research and development in the field of water management financed by the Ministry of Agriculture as part of research projects amounted to almost CZK 20.0 million.

In 2002 research and development specifically funded in the area of water management was implemented from the budget chapter of the MA in the amount of CZK 19.733 million for the Research Programme 2000 - 2004 for projects in selected thematic areas.

Out of this amount, the following were supported in the area:

A) Protection, preservation and continuous use of basic natural resources in agriculture and for the development of the countryside
   ■ 2 projects,

F) Water management, care for watercourses, flood protection
   ■ 6 projects,

G) Water management, sewer systems and treatment
   ■ 4 projects.

A summarised overview concerning the projects dealt with is given in Table 11.1.1. The focus of the projects concentrates on comprehensive research into the issue of protection and use of water as a natural renewable resource, on matters of managing water in the soil and in the countryside with the aim of increasing water retention in the countryside, on the issue of care for watercourses and flood protection from the aspect of public interest, solving problems associated with the ensuring of high-quality drinking water and the improvement of treatment processes.

■ Research intention “Comprehensive solution to problems of soil, water and countryside management” is ensured by the Research Institute of Soil and Water Conservation Prague.

The aim of the intention, dealt with in the period 1999-2003 is a deeper understanding of the development of the soil and hydrosphere in the countryside exposed to the pressure of civilisation factors, their evaluation and processes of procedures for the elimination of negative technical and civilisation influences on the basis of scientifically based management of the soil and hydrosphere in our countryside, including procedures for the rational protection of natural resources – soil and water.

Work on solutions in the year 2002 brought a total of 27 user outputs. Examples of these are the following significant applicable results. The vulnerability of soils to debasification and compaction was eva...
luated with a designation of developmental trends and prediction for future development, and there was a designation of the new value of infiltration characteristics of soils. In addition, there was an evaluation of the influences of rundown programmes on changes of mobility of the significant risk elements in soils and a current evaluation of the hygiene state of soils was carried out after the floods in the section from Prague to Děčín with an ascertaining of the fact of a reduction in contamination of fluvial soil in comparison with the reality ten years before, with the exception of content of residual pesticide DDT. An evaluation of the results of the study of the influence of depositing of organic matter in the soil on the size of surface runoff and loss of soil through erosion was tested. A model for calculation of the erosion threat to lands in the geographic information system was tested, as was its suitability for the decision making process for proposing anti-erosion measures in specific territories and river basins. Through a mathematical-statistical analysis of the system of flood and storm rainfall with a great intensity in eight river basins, the most important factors were ascertained for the retention of the river basin and the maximum specific outflow during floods. In order to evaluate the hypothesis of the increase of droughts, using the method of retrospective moisture balance (as an indicator of dryness) the needs for irrigation water were calculated for the period 1930 - 2002. In addition, for the system of use of the results of the comprehensive survey in GIS applications concerning soil, a proposal for a map server was developed and opened along with the processing of a converter of the used classification system of soils for the subsequent application of geographic information outputs.
Once again in 2002 the VÚV T.G.M. was the main researcher of tasks dealing with the problems of water protection, some tasks were also dealt with by the CHMI, or they cooperated to a significant extent on their resolution.

Under the management of the ME, there were science and research projects in the field of water protection (including associated areas) under the programme Government Board for Research and Development “HYDROSPHERE II”. This involved the following scientific and research projects: System of measures in hydrological river basins to reduce the harmful effects of floods, research into methods and development of forecasting models for the needs of flood protection, evaluation of quantitative and chemical state of groundwater, hydrogeological zoning, incidence and movement of dangerous substances in the hydrosphere, limiting non-point pollution of groundwater and surface water, influence of climatic changes on the amount and quality of water sources and on hydrological conditions in the Czech Republic, proposal of methodology for designating flood risks and damage in flood territory and their verification in the river basin of the Elbe, protection and use of water sources within the context of the unified river basin (project Elbe III), project Morava III, renewal of river continuity of Elbe by making fish channels passable, Project Odra III, influence of chemical status of water on conditions for existence of pearl mussel and evaluation of possibilities for treating waste water from sources up to 2,000 EI.

The scientific and research tasks carried on under the programme “Information about Environment” also apply to the protection of water in the broader sense of the word; system of measures in hydrological river basins for the reduction of harmful consequences of floods – development of application GIS, integration of data of remote survey Country for informational securing of care for selected elements of the environment (protection from floods, protection of water) and methodology of cartographic output from digital input data of ME. In all CZK 46.880 million from the budget chapter of the ME was expended on scientific and research projects in the year 2002.

In addition to this, many other research tasks were dealt with within the context of the contribution of the founder (ME) which tended in particular to support the implementation of the relevant legislative regulations of the EU.
12. CURRENT CONTACTS OF IMPORTANCE FOR THE AREA OF WATER MANAGEMENT AS OF 1. 8. 2003

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dispečink - Ing. Jana Kadeřábková
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OHřE RIVER BOARD, corp.
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VLTAVA RIVER BOARD, corp.
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FORESTS OF THE CZECH REPUBLIC, s.e.
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CURRENT ORGANISATIONAL DIAGRAM OF SECTION OF WATER MANAGEMENT

AS OF 1. 8. 2003

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12. Current contacts of importance for the area of water management
Report
on the State of Water Management in the Czech Republic
in the year 2002
by December 31, 2002

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