FRESHWATER COUNTRY PROFILE

CZECH REPUBLIC

Decision-Making

Programmes and Projects

A. Integrated Water Resources Development and Management
B. Water Resources Assessment
C. Protection of Water Resources
D. Drinking Water Supply and Sanitation
E. Water and Sustainable Urban Development
F. Water for Sustainable Food Production and Rural Development
G. Impacts of Climate Change on Water Resources

Status

Capacity-Building, Education, Training and Awareness-Raising

Information

Research and Technologies

Financing

Cooperation

Decision-Making: The jurisdiction in the area of water regulation within the Czech Republic is essentially divided between five ministries.

The Ministry of Agriculture is the central water regulating authority with regard to the use of water and as such its jurisdiction involves the administration of the main watercourses (which it undertakes via the 5 state catchment boards), the administration of the smaller watercourses (which it undertakes via the Agricultural Water Management Administration and the State Forestry Enterprise of the Czech Republic) and the administration of public water mains and sewers.

The Ministry of the Environment is the central water regulating authority with regard to water protection and as such its jurisdiction involves the protection of the amounts and qualities of the surface and ground water, anti-flood protection, the protection of water sources and protected natural water accumulation areas, the management of the Czech Hydrometeorological Institute and the Czech Environmental Inspectorate and basic and applied research in the area of the protection of the water quantity and quality undertaken at the T.G. Masaryk Water Management Research Institute.

The Ministry of Transport carries out the activities of a water regulating authority in matters concerning the use of surface water for navigation.

The Ministry of Defence is the water regulating authority for those territories situated within any military domains.

The Ministry of Health carries out the activities of a water regulating authority in matters concerning the designation of water bodies, which are suitable for swimming and it is responsible for inspecting the quality of drinking water and its effects on the health of the population.

By law, the water regulating authorities are municipal authorities, municipal authorities with extended competence, the regional authorities and the aforementioned ministries. As well as the water regulating authorities, the Czech Environmental Inspectorate also inspects the quality of the water, with the exception of the inspection of the adherence to water quality standards for bathing, which is undertaken by the public health protection bodies.

Programmes and Projects:
A. Integrated Water Resources Development and Management: The development and management of the water sources is secured by means of the fulfilment of the principles, which are set out for this area in the Water Act (2001, amended 2004). The Water Act establishes the administration of the watercourses and catchment areas, the issuing of permits for the use of surface and ground water and the territorial protection of water sources and the inspection of their states, including economic tools such as surcharges for water use and wastewater discharge and fines for any failure to fulfil the designated responsibilities. The planning and programmes of measures should ensure the implementation of the principles of sustainable development.

The main task in this area is to secure the requirements arising from EC Water Framework Directive, including its gradual goals. The "Implementation Plan for the Water Framework Directive setting out the Framework for Community action in the field of Water Policy" has been prepared for the implementation in the Czech Republic. This plan sets out the specific tasks, the deadlines, the responsible subjects and the methods of securing the realisation of the provisions contained in the directive. The requirements of further EC directives (in particular on the treatment of municipal wastewater, on the protection of water against nitrate pollution from agricultural sources and on dangerous substances) have also been implemented. The largest problem, especially from the point of view of finances, is the securing of the construction of sewers and wastewater treatment plants in municipalities and towns with 2000 – 5000

equivalent inhabitants and the reconstruction and modernisation of the existing treatment plants within the framework of the transition period up to the end of 2010. The "Program for the Reduction of the Pollution of Surface Water with Dangerous Substances and Highly Dangerous Substances" is also of benefit in the improvement of the surface water quality.

The Ministry of the Environment has coordinated three national projects (the Elbe, the Morava and the Oder) since the beginning of the 1990s in order to support the concept of water protection in the integrated hydrological catchment areas and hydrological regions. These projects provide the basis for the resolution of the water protection within the territory of the Czech Republic, the discussions held at an international level with the Czech Republic's neighbours and the entry of the Czech Republic into the EU.

B. Water Resources Assessment: The systematic ascertainment and evaluation of the state of the water in accordance with the requirements of the EC Water Framework Directive was implemented in 2001 by means of the Water Act. This also includes the recording of the water balances and the keeping of general records, which is undertaken by the catchment area administrators and further specialist subjects.

The water protection also includes the systematic monitoring of the water quality. This monitoring has been undertaken within the profiles of the state surface and ground water monitoring network since 1963. At present, the monitoring system for the surface water quality consists of 257 profiles on significant watercourses in which analyses of the basic physical and chemical parameters (30 to 40 indicators in all 257 profiles), heavy metals (8 indicators in 157 profiles), specific organic compounds (25 specific organic compounds in 146 profiles), biological and microbiological indicators (6 to 9 indicators in 257 profiles) are undertaken at a frequency of 12x annually. The system is supplemented with 81 profiles where radiochemical analyses are undertaken.

The quality of the surface water is expressed in so-called water quality classes (I – unpolluted water, II – slightly polluted water, III – polluted water, IV – highly polluted water, V – very highly polluted water). The quality of the water in the watercourses has significantly improved during the last decade. Since 1992, there has been no occurrence of class V, i.e. the worst water quality class (very highly polluted water), in the significant watercourses. During the period from 1992 to 2002, the water quality in some of the sections of the longer watercourses also improved from class V or class IV (highly polluted water) to class III (polluted water).

The state monitoring network of groundwaters consists of wells and springs. A total of 461 objects consisting of 137 springs, 146 shallow wells and 178 deep wells were monitored within the framework of the groundwater monitoring system in 2002. Water samples are collected and analysed 2x annually (spring, autumn). There have been no significant changes in quality since 1992, but the influence of so-called old environmental loading has been fundamentally eliminated.

C. Protection of Water Resources: The Czech Republic is located in Central Europe with an area of 78,866 km^2 and l0.2 million inhabitants. It is situated at the watershed of three seas (the North, Baltic and Black Seas), the watershed divides of which separate the territory of the Czech Republic into three main catchment areas: the Elbe, the Oder and the Danube. Practically all of the more significant watercourses bear water to the territories of the neighbouring countries. The consequence of this is the absolute dependence of the Czech Republic's water resources on atmospheric rainfall. It is therefore essential to systematically develop and protect these water sources.

The territory of the Czech Republic is home to a total of 24,518 water reservoirs and fishponds with a total volume of 4161 million m^3, of which 107 large water reservoirs have a total volume of 3521 million m^3. An average of approximately 15 billion m^3 of water flows out of the watercourses each year with fluctuations ranging from 8 billion m^3 to 24.1 billion m^3 depending on the climatic conditions.

The hydrographic network consists of 76,000 km of watercourses, of which 15,390.6 km involves significant watercourses.

A number of legislative measures have been implemented in the form of primary and secondary legislation in order to improve the state of the water protection. The basis for the legal regulation of water protection in the Czech Republic is the Water Act. The area of drinking water supply for public consumption and the sewerage systems for public use is not covered by the Water Act. This area has been resolved independently by the Water Mains and Sewers Act (2001) and the Public Health Act (2000, amended 2003). These three Acts also set out the basic legislative measures from the point of view of the transposition of the requirements of EC legislation in the area of water.

The improvements in water protection are significantly supported by the associated legal regulations (Government Decree on the indicators for the admissible pollution levels of the surface and ground water, on the prerequisites concerning the granting of permission for the discharge of wastewater into the surface water and the sewers and on sensitive areas, Government Decree on the designation of surface water suitable for the life and reproduction of original fish species and other water species and on the securing and evaluation of the state of the quality of this water, Government Decree on vulnerable areas and the use and storage of manure and farm manures, crop rotation and the realisation of anti-erosion measures in these areas and Regulation designating the list of water reservoirs and the principles for the designation and alteration of water source protective zones).

The planning in the catchment areas, which is the main tool for the rational use and protection of the water in the Czech Republic, is regulated by the legal instruments pursuant to the Water Act, they being Regulation on the catchment areas, Regulation on planning in the area of water and Regulation on the recording of the status of the surface and ground water and the methods of entering the data into the public sector information system.

Voluntary agreements have also contributed to the protection and improved quality of the water. An agreement concerning the gradual reduction of the impact of washing agents on the environment was concluded between the Czech Association of Soap, Cleaning and Washing Agent Producers (hereafter simply referred to as the Association) and the Ministry of the Environment upon the occasion of the celebrations for World Water Day in 1995. The main aim of the agreement and its amendments concluded in 1998 and 2001 is the gradual reduction of the amounts of phosphates and other undesirable substances in the surface waters and in particular the fact that the Association will supply the Czech market with only phosphate-free washing agents as of 2005. The calculation undertaken to assess the fulfilment of the agreement has shown that the overall consumption of phosphates fell from 11,600 tons in 1994 to 5122 tons in 2002 and 34% of the market is currently supplied by phosphate-free products.

In 2001, a voluntary agreement was concluded between the Ministry of the Environment and the Czech Chamber of Dentistry concerning the limitation of environmental loading due to mercury from dental care facilities. The main benefit of this agreement, apart from the acquisition of a database of these polluters, will be the equipping of all dental workplaces with effective amalgam traps by 2005, which will eliminate the discharge of mercury into the sewer system and the subsequent contamination of sewerage plant sludge.

D. Drinking Water Supply and Sanitation: In 2002, 9.16 million inhabitants in the Czech Republic were supplied with drinking water from the public water mains, i.e. 89.8% of the total number of inhabitants. As such, there has been an increase of 7.4% of the inhabitants supplied with drinking water since 1990. The share of the supplied inhabitants within the administrative regions is currently in the range of 74.8% to 99.6%.

In 2002, 7.89 million people lived in houses with connections to the public sewer system, which represents 77.4% of the overall population of the Czech Republic. Since 1990, the numbers of inhabitants living in houses connected to the public sewer system has risen by 12.3% and the amount of wastewater treated in the Czech Republic has risen by 21% in comparison with 1990 so that in 2002 it amounted to 92.6%. The consumption of drinking water in the Czech Republic has undergone permanent reductions since 1990 (by up to 40%), which has mainly been brought about by the introduction of realistic prices for water and sewerage charges. The specific drinking water consumption invoiced in total for one inhabitant of the Czech Republic in 2002 amounted to 163 l/person/day, while the specific drinking water consumption invoiced for households amounted to 103 l/person/day. These values correspond to the average drinking water consumption in the neighbouring European countries.

The quality of the drinking water supplied in the Czech Republic is regulated by the drinking water quality requirements set out in the Public Health Protection Act (2000) and in the Ministry of Health regulation which sets out the requirements for drinking water quality and the scope and frequency of the water inspections. The requirements for the quality of the drinking water fully correspond to the requirements of the WHO. The quality of the water supplied via the water mains is regularly monitored by the hygiene inspection bodies, which then qualify this water as unfit to drink, if they discover any faults. However, this only involves exceptional cases for limited periods of time.

E. Water and Sustainable Urban Development: The institution charged with securing the sustainable development of cities from the point of view of equipping them with the appropriate water management infrastructure is the "Water mains and sewer development plan", which is compiled and approved by the Regions for their own territories or part thereof for a period of a maximum of 10 years in accordance with section 4 of Water Mains and Sewers Act. The water mains and sewer development plan designates the basic concepts for the optimum development of the drinking water supply and the drainage and liquidation of wastewater together with temporal prioritising in the individual localities of the resolved territory with regard to the ownership relations, the financing options and the economic continuity of the proposed procedures. It also contains the definition of the sources of surface and ground water considered for the purposes of treatment as drinking water in accordance with the requirements of EC Directive concerning the required quality of the surface water designated for use as drinking water in the member states.

F. Water for Sustainable Food Production and Rural Development: Agriculture and the food industry are significant water users. As well as animal and foodstuff products, this involves the irrigation of up to 160 thousand hectares of agricultural land, which is however currently being reduced. At present, the effective area of the irrigated land can be estimated as only 130 thousand hectares. In 2002, the consumption of surface water for agriculture amounted to a total of 11.3 million m^3, while the consumption of groundwater was a total of 7.3 million m^3.

The Czech Republic currently has more than 24 thousand fishponds and small water reservoirs. Their total area is about 52 thousand hectares. Most of the fishponds have an area of up to 5 hectares. These fishponds enable the retention of around 625 million m^3 of water, but the infilling of some fishponds has led to a reduction of this capacity by approximately one third. The production of fish for market (the predominant species is carp) amounts to approximately 20 thousand tons a year.

In some areas of the Czech Republic (Trebon, Blatná, the Bohemian-Moravian Highlands and so on), agricultural bodies of water are of exceptional significance for the maintenance of the scenic value of the landscape and thus also for the development of rural tourism. Some of the water structures and the overall character of the landscape and the villages are also considered to form part of the national and world heritage (for example the Trebon area).

G. Impacts of Climate Change on Water Resources: Given its hydrographic conditions, the Czech Republic dedicates permanent attention to the possible impacts of climate change. The scenario for climate change within the territory of the Czech Republic and the estimates of the impact of climate change on the hydrological regimen, the agricultural sector, forestry and human health has been drawn up upon the basis of the available information. Hydrological and water management balances are kept in order to ascertain and evaluate the state of the water sources and, in the case of there being insufficient water, the water authorities have the authority to put in place all essential measures. The river system revitalisation program was established in 1992 in order to improve the retentive abilities of the landscape.

Floods represent the greatest natural danger for the Czech Republic. The flood situation and the expected consequences of the phenomenon of global warming have provided the impetus in the Czech Republic for the compilation of a number of conceptual documents which analyse the causes, course and consequences of flooding with the aim of proposing systematic countermeasures. "The strategy for protecting against floods in the Czech Republic" was approved by the government in 2000 after the 1997 floods and the influence of the floods on the quality of the surface and ground water was also systematically analysed after the floods in 2002.

In 2001, the Czech Republic concluded a contract governing cooperation with the European Centre for Medium Range Forecasts in Reading. This solution currently enables full access to a wide pallet of operative weather forecasts which are distinguished by a high degree of objectivity. Hydrological forecasting models have been compiled, calibrated and tested in the Czech Republic and they have been implemented into routine operations since 2003.

Status: Water protection in the Czech Republic is conceived as a comprehensive activity and it is based on the protection of the quantity and quality of the surface and ground water. The territory of the Czech Republic is covered by three main catchment areas (the Elbe, Morava and Oder catchment areas), to which more or less all of the watercourses in the Czech Republic belong with the odd small exception (see attachment – figure 1). The protection of the water quantity is based on the rational use of the water and the concurrent creation of the conditions for increasing the retentive abilities of the landscape. Both of these factors have a decisive influence on the state and quantity of the water. The quality of the water is influenced by pollution point sources, i.e. towns and municipalities, industrial factories and structures involving concentrated agriculture animal production, including pollution from farming, atmospheric contaminant fall-out and soil erosion.

Between 1992 and 2002, the recorded discharged pollution from pollution point sources fell by 80.6% in the BOD_5 (biochemical oxygen demand) indicators, by 73.7% in the COD_{Cr} (chemical oxygen demand) indicators, by 68.9% in the indicators of suspended solids, by 61.8% in the alkality acidity indicators and 10.3% in the indicators for dissolved and inorganic salts (see attachment – figure 2).

From 1992 to 2002, the amount of discharged dangerous and highly dangerous substances was reduced. For example, the amount of mercury was reduced by approximately 2.5 tons to less than 0.5 tons and there was also a significant fall in the discharged amount of absorbable organically bound halogens (AOX) and macronutrients (nitrogen, phosphorus). The total amount of phosphorus was reduced in this period by 41% and the amount of inorganic nitrogen by 28%. The fall in these levels mainly occurred as a consequence of the fact that the removal of nitrogen and phosphorus has been applied to the sewerage treatment technology at the new and intensified sewerage treatment plants.

The quality of the surface and ground water is significantly influenced by difuse pollution – in particular from agriculture, atmospheric contaminant fall-out and erosive washings from the terrain. The significance of the surface pollution has risen with the continuing fall of the pollution from point sources. Its share is especially significant in the case of nitrates and acidification, but less so in the case of

phosphorus and it varies in the different areas of the Czech Republic depending on the density of the settlement and the share of the treatment of the discharged wastewater, the intensity and method of agriculture and the level of atmospheric contaminant fall-out.

The quality of the surface and ground water is further negatively affected by accidental pollution. In 2002, The Czech Environmental Inspectorate registered 246 cases of the accidental pollution or threatened water quality within the territory of the Czech Republic, of which 12 cases involved groundwater. The most common group of pollutants were oil products (49.2% of the total number of recorded cases) followed by chemical substances (8.9%). When analysed according to the originators of the accidents, the most accidents were caused by traffic (10.6%) followed by accidents in agriculture (7.4%).

In the period from1992 to 2002, the consumption of surface water fell by 74.4% in agriculture, by 49.4% in industry, by 27.4% in power plant engineering and by 42.5% for the needs of the public water mains.

Since 1992, consumption of groundwater has fallen by 41.1% in agriculture, by 24.5% for the needs of the public water mains and by 23.5% in industry, while the water use increased by 6.2% in power plants.

In comparison with 1992, the amount of wastewater and mine water discharged into the surface water fell by 37.1% in industry, by 29.1% in power plants, by 13.5% in the case of public sewers and by 9.1% in agriculture.

The long-term improvements in the quality of the surface water (see attachment – figure 3) have mainly been caused by the construction or intensification of the decisive sewerage treatment plants, the cancellation or limitation of the production operations of a number of industrial companies and reductions in the use of fertilizers in agricultural production. However, despite the achieved improvements, the current state cannot be considered to be fully satisfactory and some parts of the watercourses with lesser water content and a high accumulation of the sources of pollution are problematic.

Capacity building, Education, Training and Awareness-Raising: The Ministry of the Environment not only secures the legislative legal conditions for water protection, but also the enlightenment and education activities. In the area of the enlightenment of the public, a series of specialised, expert, informative and popularising publications are issued for this purpose. The education programs for state sector employees, students and pedagogical employees at educational facilities ranging from nursery schools to universities are dedicated to all of the environment's components, including water.

When issuing queries, the public is provided with the given answers upon the basis of the Act on Free Access to Information (1999) and the Act on Access to Information on the Environment (1998).

Projects oriented towards educating people about the individual components of the environment (including water) are also supported within the framework of subsidies for the projects of non-governmental organisations (NGOs) concerning the area of environmental education, training and enlightenment.

Many NGO projects and publications or the exhibitions of the Ministry of the Environment, the Regional Authorities and the various Municipal Authorities are dedicated to water protection, flooding, wetlands protection, biodiversity, the significance of forests in relation to hydrological conditions, the influences of breeding agricultural animals (their excrement), the leakage of oil and oil products into the groundwater and other topics. The management of the country's national parks and nature reserves also approaches the area of environmental education, awareness raising, informing and enlightening the public very responsibly. The problem area of water protection is also a significant topic within these organisations.

Not only the state, but also a number of non-governmental non-profit organisations are involved in the practical protection of water ecosystems, wetlands, water birds and their nests and hunting grounds, amphibians and a number of other animals or plants both in protected and unprotected natural areas. The best known and most significant NGO programs in the Czech Republic include the nationwide programs of the Czech Association of Environmentalists, such as the well protection program, the Crayfish Project, tree planting both inside and outside forests, care for wetlands, biodiversity protection programs, care for handicapped animal species (including those bound to water), the transfer of frogs across roads and so on.

Management and education: Amongst other things, the legal regulations concerning the area of water mains and sewers form the framework for the management of the water supply and the removal and treatment of wastewater. The expertise of the management is secured by means of the system used when granting entitles permission to operate water mains and sewers in accordance with section 6 of the Water Mains and Sewers Act.

Experts specialising in the area of water management are taught within the framework of both the secondary schools and the universities of the Czech Republic. At present, the option of the permanent education of the workers in the field of water mains and sewers is under preparation in conjunction with the operators of such facilities within the territory of the Czech Republic. The Ministry of the Environment secures the regular specialist training of the employees at the water regulating authorities at all levels, as well as the specialist training of the executive employees of the catchment boards for the significant watercourses (i.e. the catchments boards of the Elbe, the Vltava, the Ohre, the Morava and the Oder) and the largest of the administrators of the smaller watercourses, such as the Agricultural Water Management Authority and the Czech Forestry state enterprise.

Information: The Ministry of Agriculture uses two internet portals to inform the public with regard to the area of water management. Information directly associated with the activities of the Ministry and the execution of the state administration is published on the Ministry's web site at www.mze.cz. These pages contain up to date information about water management and the Ministry's activities, as well as information about subsidies, water management legislation, technical specialist standards and statistical findings in the area of water management. The public can also find information there about anti-flooding protection and the supply of drinking water to the public in crisis situations. The public is also able to use this site to find the basic procedures for the resolution of environmental situations and problems associated with water management. Selected publications and documents are also available on the site in electronic form. The information on the planning processes in the area of water and the records of the decisions of the water regulating authorities are associated with the performance of the state administration.

The Ministry of Agriculture's portal provides direct access to the catchment administration website ("Povodi.info") where the public can find information about flood plains, the states and through flows of the significant watercourses, information on the state of the trophisms of selected reservoirs, the territorial links of the significant watercourses to the individual administrative units of the Czech Republic and the basic information about the state catchment boards. The Ministry of the Environment's web portal also offers links to the internet pages of the two most significant administrators or lesser watercourses (the Agricultural Water Management Authority and the Czech Forestry state enterprise).

As far as public interest is concerned, the information activities in the area of drinking water supplies do not pose any problems.

The Czech Statistics Office secures the information in the field of water mains and sewers. Summarised information concerning the development of the indicators and the situation in the field are published every year in the Water Mains and Sewer Yearbook of the Czech Republic and in the Report on the State

of the Water Management in the Czech Republic. The electronic versions of these publications are located on the web pages of the Ministry of Agriculture. Section 5 of the Water Mains and Sewers Act establishes the responsibility of water main and sewer owners or operators to submit selected information from their property and operating records to the water regulating authorities. The information as to the quality of the supplied drinking water is monitored within the framework of the so-called "Nationwide Water Quality Monitoring" and this is undertaken in relation to the collection points and the individual water mains. This monitoring enables a central overview of the quality of all of the drinking water supplied from public sources and it is published by the National Institute of Public Health.

Section 9, subsection 3 of the Water Mains and Sewers Act sets out the responsibility of water mains operators to provide the municipality with an overview of the ascertained water quality indicators for the past year upon being requested to do so and also states that said operators must submit this overview within 30 days of receiving said request. At the same time, section 36, subsection 6 of this Act obliges operators to immediately inform the appropriate public health body, if any worsening of the quality of the supplied water is discovered and to subsequently inform the water consumers if this body should declare the water unfit to drink.

The Ministry of Agriculture cooperating with the Ministry of the Environment submits to the government and publishes a "Report on the State of the Water Management in the Czech Republic" once a year. This report also includes information about the quality of the surface and ground water. The Ministry of the Environment also presents a "Report on Water Protection in the Czech Republic" to the government every year. The Ministry of the Environment's www.env.cz web pages contain these reports as well as information about the legal regulations, the implementation tools for European water legislation and anti-flooding protection. The Ministry of Agriculture cooperating with the Ministry of the Environment submits "Information about the State of the Drinking Water Supply and Drinking Water Quality" to the government every even year. The State Healthcare Institute issues a "Drinking Water Quality Report" every year within the framework of the public health monitoring system. This report includes selected territories of the Czech Republic and almost half of the inhabitants supplied from public water mains. The aforementioned reports are available in both their printed forms and on the internet pages of the appropriate resorts.

The current information about the through flows and the levels of watercourses at significant reporting profiles (approximately 100) is made available on the internet at www.chmi.cz in association with flood protection. The current information has also been available on the teletext service provided by the public Czech Television broadcaster (Channel 1) since 1997.

The Hydroecological Information System (HEIS) containing a set of basic registers and information about the quantity and quality of the surface and ground water sources, the consumption and discharge of water, the hydrological balance, the register of the territories with special water protection and so on has been established within the framework of the Integrated Environmental Information System.

The Czech Republic is a signatory of the Aarhus Convention. The Act on Access to Information on the Environment is fully in accordance with this Convention.

Research and Technologies: The research in the area of water is financially supported from the funds of the Ministry of the Environment and the Ministry of Agriculture, as well from the funds expediently earmarked by the government for the support of research and development. Both resorts have a number of specialist institutes, the activities of which are significant not only for the needs of the resorts, but also for the resolution of the selected water management problems of the Czech Republic.

The research in the area of water mains and sewers is currently oriented towards the monitoring of the quality of the water in long pipe systems in association with the increasing periods of time the water spends in the pipes as a consequence of the falling consumption of drinking water and towards the evaluation of the current state of water treatment, treatment plant reconstruction and the renewal of the distribution network in the Czech Republic.

The T.G. Masaryk Water Management Research Institute provides specialist advisory, methodological, consultation, and coordination support for the state sector in the area of water protection and management upon the basis of targeted research in the area of water management.

The Czech Hydrometeorological Institute collects meteorological, climatic and hydrological information attained from its expansive network of stations and it draws up hydrological assessments for the needs of planning in the area of water and for the design and construction of water management structures.

The Research Institute for Soil Melioration and Protection resolves the problem area associated with melioration, pedology and soil and water use in agricultural landscapes and it secures the implementation of the new information into practise.

The Forestry and Gamekeeping Research Institute contributes to the clarification of the close relations between forests and water circulation.

The Vodnany Piscatorial and Hydrobiological Research Institute is oriented towards the implementation of intensive methods of fish breeding and acclimatisation and the development of the required techniques and technology.

The Institute for Hydrodynamics at the Academy of Science of the Czech Republic was established in 1953 and it is involved in basic research into the field of the mechanics of liquids, rheology, biomechanics, hydrology and the environment.

The Hydrobiological Institute at the Academy of Science of the Czech Republic concentrates on research into the mutual relations between biotic agents and their interaction with abiotic factors in water bodies, especially in water reservoirs and streams (so-called “man-made lakes”).

As well as the aforementioned organisations, universities are also involved in research and development activities within the framework of international cooperation and in the research and development projects run by the government and the grant agencies (the Czech Grant Agency and the National Agency for Agricultural Research).

Financing: The government of the Czech Republic financially supports the investment development of the water management infrastructure. It has adopted a basic strategy according to which direct grants will be gradually reduced and returnable financial assistance will be applied in greater amounts. By contrast, the financing of investments will be projected into water and sewerage prices, while respecting the ability of society to bear such prices. In the area of water mains and sewers, the state’s grant policies follow three priority directions: support for the construction and reconstruction of sewerage treatment plants, including sewer systems, the additional construction of large water management systems and financial support for group and local water systems.

The Ministry of Agriculture supports the financial development of the water management infrastructure of water mains and sewers within the framework of the investment programs for the Construction and Technical Renewal of Water Mains and Water Treatment Stations and for the Construction and Technical Renewal of Sewerage Treatment Plants and Sewers. At the same time, state aid has also been secured for

the renewal of the territories affected by the floods from 2002 with the main orientation being towards the renewal of the water management infrastructure of the water mains and sewers. The repair of the impact of the 2002 floods on watercourses and hydraulic structures owned by the state is being undertaken within the framework of the program for the Repair of the Consequences of Flooding to the State's Water Management Property.

In 2003, the realisation of a financially demanding flood prevention investment program was commenced (this requires an investment of ca 4.0 billion CZK by the end of 2005).

At the same time, the systematic renewal of the fishpond system in the Czech Republic has also been commenced in accordance with criteria aimed at increasing the retentive abilities of the landscape and flood protection at fishponds and small water reservoirs within the framework of the program for the Renewal, Mud Removal and Reconstruction of Fishponds and Water Reservoirs.

The financial support of the Ministry of the Environment is mainly oriented towards the revitalisation of river systems. In 2004, the Program Supporting the Treatment of Wastewater in Smaller Municipalities was transferred from the Ministry of the Environment to the Regional Authorities. The State Environmental Fund provides financial support to municipalities for water protection (especially for the implementation of measures at pollution sources) in the form of grants and contributions used for the partial defrayal of interest rates. The State Environmental Fund also collects fees for discharge of wastewater.

A number of water management investments have been made using international funds from the PHARE program and the European Investment Bank. These funds have been used to support the construction of water mains, water treatment plants, sewers and sewerage treatment plants and flood prevention measures. In 1999, accession talks were held with the EC concerning the preliminary conditions for the ISPA pre-structural fund. The first prepared projects were oriented towards the construction and reconstruction of water management facilities in the areas of sewers and sewerage treatment plants and water mains and water treatment stations. The projects prepared within the framework of the cohesion funds are related to these earlier projects.

Significant amounts of funds have been dedicated to flood protection and the repair of flood damage. The Czech Republic accepted a 400 million EUR general loan from the EIB for the financing of the repair of the flood damage from 2002. This loan is payable within 30 years of the signing of the contract. An amount of 5.8 billion CZK has been set aside for the area of water management.

Cooperation: The Czech Republic is developing modern water protection principles based on the hydrological catchment areas of the large rivers and hydrogeological regions crossing the borders of a number of states in accordance with the Convention on the Protection and Use of Transboundary Watercourses and International Lakes concluded in Helsinki in 1992 within the framework of the UNECE, which the Czech Republic ratified in 2000. One year later, the Czech Republic also ratified the Water and Health Protocol to this Convention. The hydrographic position of the territory of the Czech Republic predetermines its active involvement in international cooperation in water protection within the framework of the international commissions for the protection of the integrated catchment areas of the Elbe, the Danube and the Oder. By means of these activities, the Czech Republic also contributes to the necessary protection of the North, Black and Baltic Seas. The work in these commissions mainly concentrates on the implementation of the Water Framework Directive in the international catchment areas, cooperation in flood protection, the prevention of pollution causing accidents and other questions concerning the protection of water and water ecosystems.

Given the fact that 30% of the state border of the Czech Republic consists of watercourses, the cooperation on the watercourses forming the border between the Czech Republic and its neighbouring states (Germany, Austria, Slovakia and Poland) is regulated by means of bilateral interstate or inter-government treaties and agreements. The fulfilment of these treaties and agreements is ensured by a bilateral commission for water management affairs concerning the border watercourses or by means of discussions between the government's water management representatives.

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