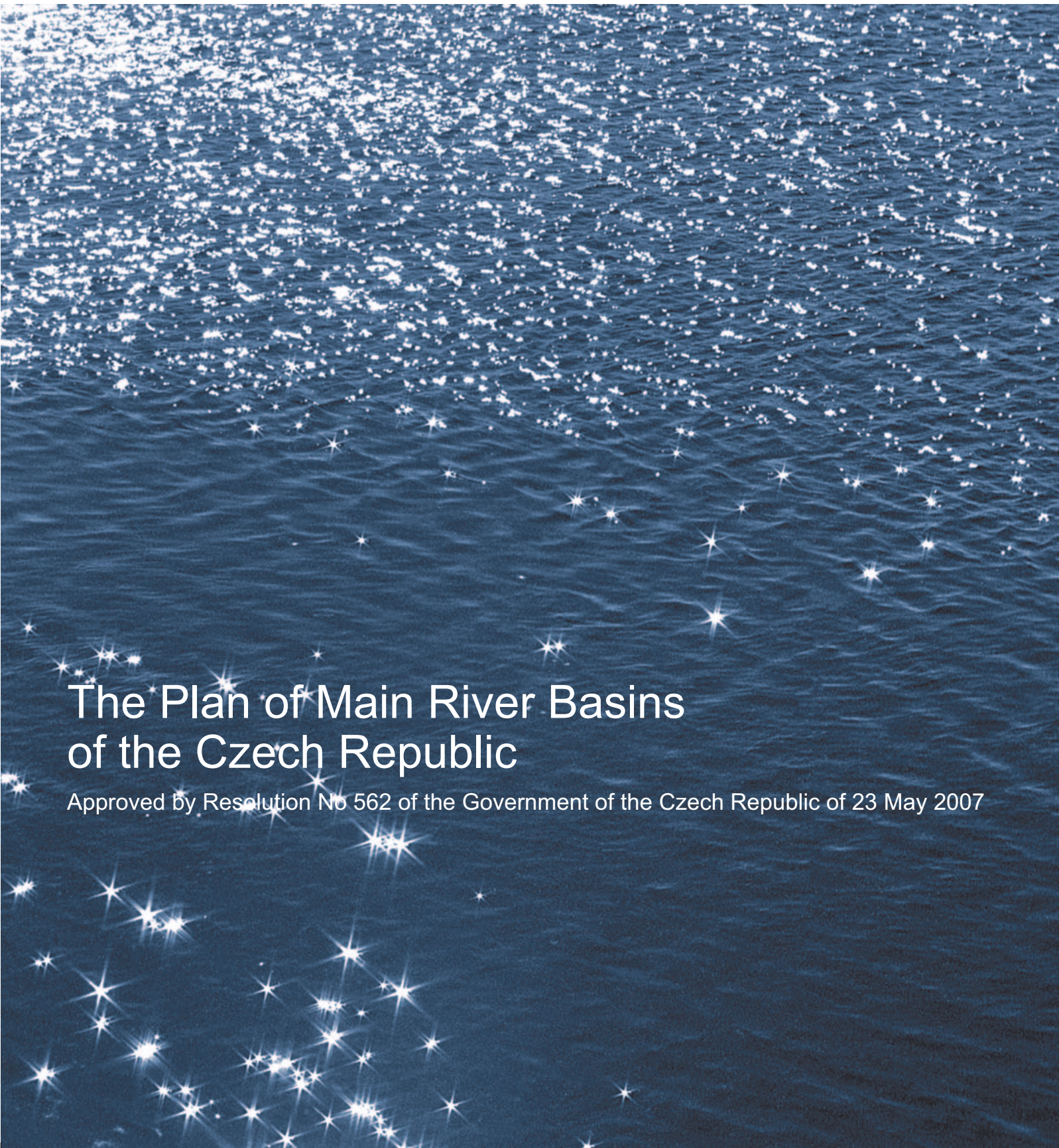
The Plan of Main River Basins
of the Czech Republic



The Plan of Main River Basins of the Czech Republic

Approved by Resolution No 562 of the Government of the Czech Republic of 23 May 2007

GOVERNMENT OF THE CZECH REPUBLIC

RESOLUTION No 562

OF THE GOVERNMENT OF THE CZECH REPUBLIC
of 23 May 2007

on the Plan of Main River Basins of the Czech Republic

The Government

I Approves the Plan of Main River Basins of the Czech Republic as contained in Part III of Paper Ref. No. 593/07 (hereinafter referred to as "the Plan");

II Enjoins:

1 Members of the Government and heads of other central administration authorities, to take the Plan into account in policy documents falling within the competencies of the Ministries headed by them;

2 Minister of Agriculture, to present a draft Government resolution to the Government by 23 August 2007 whereby The Mandatory Part of the Plan will be promulgated;

3 Deputy Prime Minister and Minister of the Environment to draw up, and present for information to the Government by 22 February 2010, plans of the national parts of the international basins of the Elbe, The River Odra and the Danube;

III Recommends to Regional Governors and the Mayor of Prague to take the Plan into account when preparing policy documents falling within their competencies and in procuring planning documentation.

To be carried out by:

Members of the Government
Heads of other central
administration authorities

Copies to:

Regional Governors
Mayor of Prague

Prime Minister
Mirek Topolánek m.p.

PRESENTED BY

Ministry of Agriculture in co-operation with the Ministry of the Environment,
the relevant central administration authorities,
Ministry of Health,
Ministry of Transport,
Ministry of Defence,
Ministry of the Interior,
and Ministry for Regional Development,
and the following Regional Authorities:
Středočeský kraj Regional Authority,
Jihočeský kraj Regional Authority,
Plzeňský kraj Regional Authority,
Karlovarský kraj Regional Authority,
Ústecký kraj Regional Authority,
Liberecký kraj Regional Authority,
Královéhradecký kraj Regional Authority,
Pardubický kraj Regional Authority,
Vysočina Regional Authority,
Jihomoravský kraj Regional Authority,
Zlínský kraj Regional Authority,
Olomoucký kraj Regional Authority,
Moravskoslezský kraj Regional Authority,
and the Municipality of Prague.

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INTRODUCTION

Being a government policy paper on waters, the Plan of Main River Basins of the Czech Republic has been drawn up under Act No 254/2001 on Waters and Amendments to Certain Laws (Water Act) as amended. The Plan is a part of the planning process in the field of water policy as a continuous and conceptual activity guaranteed by the State, which has been introduced into Czech law in compliance with the requirements of the transposition of the European Communities' acquis communautaire, in particular, but without limitation, Directive No 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (hereinafter referred to as "Directive No 2000/60/EC").

This first Plan of Main River Basins of the Czech Republic constitutes a long-term concept in the field of water policy, covering a six-year period from 2007 to 2012. It integrates the plans and objectives of the central water authorities' sectoral policies in the sharing of their respective competencies under Section 108 of the Water Act; in particular, it follows up on the Concept of the Water Management Policy of the Ministry of Agriculture for the Period after the Accession to the European Union for the years 2004 to 2010 and on the National Environmental Protection Policy for 2004 to 2010. Together with the other related national policies and sectoral concepts, the Plan creates a framework for forming a policy of care for the territory of the Czech Republic complementary to the EU policy. The Plan of Main River Basins of the Czech Republic will be updated once every six years.

Under Section 24 of the Water Act, the Plan of Main River Basins of the Czech Republic has been prepared by the Ministry of Agriculture in co-operation with the Ministry of the Environment, the relevant central administration authorities (Ministry of Health and Ministry of Transport as central authorities in the field of water policy), Ministry for Regional Development, Ministry of the Interior, regional authorities, and the Municipality of Prague.

Formally, the Plan of Main River Basins of the Czech Republic has two parts: The General Part and The Mandatory Part. Once promulgated by a Government Order, The Mandatory Part of the Plan of Main River Basins of the Czech Republic will become a mandatory basis for the central administration authorities' proposals of measures conducive to the meeting of general objectives, including the raising of the funds to implement the measures proposed, for producing policy documents relevant to waters and water management, and for preparing plans in the eight areas that the Regions are obliged to approve by 22 December, 2009.

Planning in the field of water is a continuation of so called "water management planning" where we have a long tradition. For example, absence of water management plans would have made it impossible to build fish pond systems in Pardubice region and in South Bohemia in the 16th century as well as to build the dams in North Bohemia in the beginning of last century as a result of industrial development and the flood protection needs. The foundations of the present-day water management planning were laid by the works dating back to the 40's of the last century. The "Moravian Water Management Plan" was developed in 1941, the work "Waterways and Water Management Planning in Bohemia and Moravia" dates back to 1946 and the "General Plan of Water Management Development in the Czech and Moravian-Silesian Lands as the Basis of Systematic Planning" was drawn up in 1947. The National Water Management Plan of the Czechoslovak Republic, which was developed in the period 1949-1953, and it's update in the years 1975-1976 under the name General Water Management Plan of the Czechoslovak Republic – 2nd edition can be, with the benefit of hindsight, assessed from several aspects. On the one hand the plan provided a coherent view of the potential of water resources exploitation, initiated systematic monitoring of water and water management balance, established the concept of drinking water supply by the group water supply mains and regional water supply mains and facilitated organization of watercourse management by river basins. On the other hand it suggested investment measures according to the water use prediction which was excessively a product of its time and after 1990 ceased to be valid.

A change compared to the previous concept of water management planning also reflects in the new document name. The new concept requires, in the sense of sustainable development, comprehensive solutions harmonizing requirements for the use of water resources and for protection against detrimental effects of water with environmental requirements for protection water and ecosystems associated with water.

Mandatory Part

Under Act No 254/2001 on Water and Amendments to Certain Laws (Water Act) as amended, the Plan of Main River Basins of the Czech Republic is a strategic document reflecting planning in the field of water which is based on Directive No 2000/60/EC, other relevant European legislation and international agreements, conventions and obligations of the Czech Republic in the field of water. This document sets general objectives of the national policy for harmonizing the following public interests:

a) protection of water as a component of the environment,
b) flood protection and protection against other detrimental effects of water,
c) sustainable use of water resources and water management to cover the requirements for water services especially for the purpose of drinking water supply.

The territory of the Czech Republic is situated in three international river basins (the Elbe, the River Odra and the Danube) where the interests of water protection are safeguarded through international agreements. These agreements constitute the basis for the work of the International Committees for the protection of the Elbe, the River Odra and the Danube, which were authorized by the member states to coordinate the implementation of Directive No 2000/60/EC and to develop plans of the international basins of the Elbe, the River Odra and the Danube by December 22, 2009. The Czech Republic is responsible for coordinating and developing the national parts of the individual plans of the international basins. These national parts are under Section 24 of the Water Act defined as the main river basins of the Czech Republic.

Once promulgated by a Government Order, The Mandatory Part of the Plan of Main River Basins of the Czech Republic will become the mandatory basis for:

a) The central administration authorities' proposals of measures conducive to the meeting of the general objectives, including the raising of the funds to implement the measures proposed,
b) Producing policy documents relevant to waters and water management,
c) Preparing plans of river basin districts,
d) Developing the required levels of joint plans of the international river basins.

The overall objective of the national policy in the field of water is to create conditions for sustainable management of the limited water resources of the Czech Republic, facilitating harmonization of requirements for all forms of the use of water resources with the requirements for protection of water and aquatic ecosystems, at the same time taking into account the measures to mitigate the detrimental effects of water.

The main principles of the national policy in the field of water follow the renewed strategy of the European Union for sustainable development:

RETENTION OF WATER IN THE RESPECTIVE AREA AND WATER PROTECTION

To support reduction of the adverse impacts of urbanization, farming and forestry on water resources, to support rehabilitation of ecological stability of landscape and an integrated approach to water protection and water management.

INTEGRATION OF THE POLICIES OF ECONOMIC SECTORS AND THE LOCAL AND REGIONAL AUTHORITIES

To involve other economic sectors including the municipalities and public administration at the level of regional authorities to ensure an integrated approach to addressing the prospective needs and requirements for water, in particular with regard to the long-term prospect assuming a more distinct manifestation of the consequences of the anticipated climate changes.

PRECAUTION

To use, in case of scientific uncertainty, evaluating procedures and suitable preventive measures with the aim to prevent damage to human health or the environment.

PUBLIC AWARENESS

To increase involvement of the public in the decision-making process. To prepare appropriate communication strategies to ensure public awareness concerning the intentions, potential development scenarios and alternative solutions.

ECONOMIC AND SOCIAL IMPACTS

To keep implementing the "user pays, polluter pays" principle and when selecting scenarios of measures, to take into consideration also the economic and social impacts in addition to the environmental ones.

1. OBJECTIVES AND MEASURES IN PROTECTION OF WATER AS A COMPONENT OF THE ENVIRONMENT

Specific objectives are designed to protect surface water and groundwater, to facilitate sustainable and well-balanced use of water resources, to reduce trans-border pollutant transport by watercourses, to create conditions for the protection and improvement of the status of surface water and groundwater and the aquatic ecosystems or the individual aquatic species and to help to protect terrestrial ecosystems or individual terrestrial species depending on aquatic life. Meeting these objectives will also help to create ecologically stable landscape resistant to external adverse impacts and contribute to the reduction of sea pollution.

1.1. General objectives in protection of water as a component of the environment

1.1.1. In surface water protection

a) To prevent deterioration of the status of all surface water bodies;

b) To provide for the protection, improvement of the status and rehabilitation of all these water bodies (with the exception of artificial and heavily modified water bodies) and to achieve their good status;

c) To deal with the protection and improvement of the status of all artificial and heavily modified water bodies and to achieve their good ecological potential and good chemical status;

d) To focus on reducing pollution caused by harmful substances, nutrients and organic matters, i.e. to stop or gradually eliminate emissions of these substances and to prevent their infiltration from non-point sources of pollution.

1.1.2. In groundwater protection

a) To stop or to reduce infiltration of pollutants into groundwater and to prevent deterioration of the status of all groundwater bodies;

b) To provide for protection, improvement of the status and rehabilitation of all groundwater bodies and to ensure well-balanced status in the interval between individual groundwater abstractions and the replenishment of groundwater, and to achieve a good status of these waters;

c) To avert any significant and lasting trend of concentration of harmful, especially dangerous and other harmful substances as a consequence of human activity with the aim to reduce pollution of groundwater;

d) To monitor the development of the status and supplies of groundwater as well as the possibilities of their use.

1.1.3. In protection of water in protected areas

a) To achieve the standards and to meet other requirements defined for surface water and groundwater in protected areas;

b) To protect the habitats and species associated with water and to generate conditions for biodiversity improvement.

1.1.4. In using water resources for drinking water supply

To meet the requirements for quality of water abstracted from water resources for the purpose of drinking water treatment.

1.1.5. In using surface water for bathing

To implement Directive No 2006/7/EC on bathing water quality management and on repealing Directive No 76/160/EE C.

1.1.6. In support of fish life and other aquatic species

a) To safeguard the required quality of designated salmon and carp waters;

b) To open the passage through transverse migration barriers on watercourses and to re-establish new shelter and propagation biotypes.

1.1.7. In protection of the runoff regime

a) To ensure the protection of the runoff regime in the landscape and to improve water retention capacity of the landscape;

b) To ensure protection of the natural river bed morphology and protection of all types of wetlands under the Ramsar Convention;

c) To improve the status of aquatic ecosystems and ecosystems associated with water;

d) To maintain and systematically improve the biological diversity of indigenous species;

e) To ensure implementation of farming standards with regard to the protection of the environment (cross compliance).

1.1.8. In monitoring the status of surface water and groundwater

To provide monitoring programmes in the required scope allowing:

a) To draw up the river basin district plans;

b) To monitor and check the fulfilment of the objectives of the protection of water as a component of the environment;

c) To meet international obligations and commitments resulting from EC/EU regulations.

1.2. Measures in protection of water as a component of the environment

1.2.1. Starting in 2007, to put into operation the system of monitoring and survey of water status in a manner allowing to cover all significant anthropogenic impacts with regard to both the chemical and the environmental water status including the monitoring of hydromorphological conditions, to ensure all the necessary source documents for evaluating the status of water bodies as well as for draft river basin district plans, and to provide all data required for evaluation of the effectiveness of the implementation of the programmes of measures.

1.2.2. Based on the evaluation of monitoring results, water bodies status assessment, expert opinion on the possibility to improve the status of water bodies and the water supply and the plans for development of sewerage systems of the regions, to identify in the river basin district plans projects for and evaluate the impact of:

a) The missing municipal waste water treatment plants and sewerage systems in conurbations with more than 2,000 population equivalent (hereinafter referred to as PE);

b) The rehabilitation and intensification of municipal waste water treatment plants to improve the waste water treatment technologies in conurbations with more than 2,000 PE;

c) The missing appropriate waste water treatment in municipalities with up to 2,000 PE and furnished with an approved and well-functioning public sewerage system;

d) The missing appropriate waste water treatment in municipalities with up to 2,000 PE where the impact of municipal pollution constitutes a major factor affecting the status of the relevant water body.

For individual projects in conurbations with more than 2,000 PE included in the updated list considered by the Government in the framework of the Updated Strategy for Funding the Implementation of Council Directive No 91/271/EEC on municipal waste water treatment as well as for relevant specific projects in conurbations with up to 2,000 PE, to draw up, in river basin district plans, the time schedules for completing constructions which were not completed in 2008, including the method of funding. To use to this end the financial support resources in national programmes and the European Union funds, in particular the funds of the Operational Programme Environment, and to observe the need to meet the deadline on December 31, 2010 which will meet the requirement of the European Union for municipal waste water treatment in compliance with the Treaty of Accession of the Czech Republic to the European Union.

1.2.3. To identify, in the river basin district plans, priority projects aimed at rehabilitating sewerage systems which are obsolete and susceptible to failure, in order to reduce the risk of uncontrolled groundwater contamination due to the leakage of discharged waste waters. Following an agreement between the parties developing river basin district plans and the infrastructure owners, to draw up time schedules for preparation and successive implementation of relevant projects. To use, to this end, financial support resources in national programmes and the European Union funds, in particular the funds of the Operational Programme Environment. To select the projects on the basis of, in particular, cost-benefit analysis and the effects favourable to water protection as well as on the basis of the approved water supply and sewerage system development plans for the regions.

1.2.4. To update the water supply and sewerage system development plans for regions if the evaluation of water monitoring or other data indicate that the objectives of water protection are not likely be met by implementing the programme of measures with regard to the water body in question.

1.2.5. To identify, in the river basin district plans, the following projects:

a) To improve the hydromorphological parameters of the environmental status of watercourses including riparian features;

b) To improve watercourse passage for fish and other aquatic animals and to support the development of indigenous fish populations.

To base the selection of priority projects on water monitoring results, evaluation of the effectiveness of the measures proposed and also on the Action Plan for the Construction of Fish-passing Facilities. To use, to this end, especially the financial support resources in national programmes and the European Union funds, in particular the funds of the Operational Programme Environment.

1.2.6. To propose in the programme of measures constituting a part of the river basin district plan, based on water monitoring evaluation and analysis of soil erosion risks, systemic measures in favour of the protection of water and ecosystems associated with water, relating to farmland and forest land management (derived from observing the principles of the "good agricultural and environmental status" as well as the standards) and also measures aimed at improving the quality of life in rural areas. To use, to this end, especially the financial support resources included in the Programme of Rural Development in the Czech Republic for the period 2007-2013 and also in the Operational Programme Environment for the period 2007-2013. To implement, in particular, the measures derived from the process of carrying out land consolidation, sustainable use of farmland and forest land (especially grassing the land along watercourses, afforestation, reduction of adverse impacts of water erosion etc.), measures to meet the requirements for management in vulnerable areas, environmentally sensitive management methods as well as the measures derived from construction of minor water structures in municipalities with up to 2,000 PE (sewerage systems and waste water treatment plants).

1.2.7. To identify in the river basin district plans, based on water monitoring evaluation and analysis of the assessment of water bodies status, the facilities designed for treatment or neutralization of wastewaters and the sewerage systems discharging effluents from industrial pollution sources, that pose certain risks in terms of the inability to meet the requirements of national legal regulations and for certain industries those of Council Directive No 91/271/EEC on treatment of municipal waste waters.

1.2.8. To transpose new Directive No 2006/7/EC concerning management of bathing water quality and repealing of Directive No 76/160/EEC by March 24, 2008.

1.2.9. To reflect in the river basin district plans the measures of the Programme for Reduction of Surface Water Pollution and, based on that, to propose specific changes to the current designation of surface waters suitable for life and reproduction of indigenous fish species and other aquatic animals in order to update and modify the designation of these waters.

1.2.10. To transpose Directive No 2006/118/EC on the protection of groundwater against pollution and deterioration by January 16, 2009.

1.2.11. To aim to finalize the designation of protected zones to protect the yield, quality and health safety of major water resources in use.

2. THE OBJECTIVES AND MEASURES IN FLOOD PROTECTION AND PROTECTION AGAINST OTHER DETRIMENTAL EFFECTS OF WATER

The specific objective is to retain water in the landscape by optimizing its structure and its use and by implementing effective nature-friendly measures as well as technical precautionary measures.

2.1. General objectives in flood protection

To reduce the threat to the population posed by harmful effects of floods and to limit the threat to property as well as cultural and historical values while making a priority of adopting the precautionary principle.

2.1.1. At the time of flood control

a) To improve the warning and forecasting service also in relation to neighbouring states;
b) To increase the utility value and the reliability of flood forecasting;
c) To increase flood danger awareness of the public exposed to flood threat, to improve the practical knowledge when handling the flood risk and to improve the quality of the co-operation with flood protection authorities and the bodies of the integrated rescue system;
d) To improve co-operation among the parties involved in flood protection including the ability to provide timely, high-quality and updated information and to improve the quality of communication systems;
e) To increase the ability of personnel of water management dispatch centres of river basin administrators, flood protection authorities, the individual bodies of the integrated rescue system and the system of crisis management to handle flood emergencies;
f) To improve the quality of providing updated information to the public through flood protection authorities;
g) To improve the availability of information to the public on all kinds of flood risks including the specific local risk of special floods hazard.

2.1.2. After flood

a) To improve the rules and conditions for providing assistance from the public budget resources for repairs, refurbishment or replacement of property conclusively damaged by flood, for the sake of accelerated rehabilitation of the basic functions in the respective area;
b) To draw up principles for uniform documentation of flood evaluation.

2.1.3. Flood prevention

a) To improve the legislative and economic tools relating to the implementation of precautionary measures;
b) To improve the quality of the operational and informative parts of flood protection plans;
c) To ensure flood situation training with participation of all who are exposed to flood threat;
d) To support insurance against the risks of flood damages as a basic tool for protection of property values;
e) To improve the quality of source documents regarding the size of areas exposed to flood threat including the relevant infrastructure, on the characteristics of the course of floods as well as on flood hazard and its handling;
f) To reduce activities impairing run-off conditions and increasing flood risks in flood plain areas;
g) To ensure effective designs of preventive flood protection measures on the basis of high-quality source documentation and optimization of the alternatives of the concepts for dealing with flood protection using risk analysis and cost-benefit analysis;
h) When designing preventive flood protection measures, to look for an appropriate combination of landscape measures increasing the natural accumulation and retardation of water in the respective area and technical measures affecting flow rates and flood wave volumes;
i) To use such methods of farmland and forest land management that do not impair the retention capacity of soil and do not have adverse impacts on hydrological regime in the landscape; to prepare and to put into practice adequate economic tools to this end;
j) To use the available financial support from the relevant national programmes as well as the funds of the European Union in order to improve flood prevention in flood risk areas;
k) To improve the technical condition of hydraulic structures and their operation with regard to flood protection;
l) To extend and to improve the quality of communication with the public on all aspects of flood prevention;
m) To support the involvement of expert institutions in relevant disciplines in international co-operation with the aim to improve flood protection in the framework of European co-operation and for effective transfer of know-how;
n) To coordinate flood protection plans within international river basins.

2.2 . General objectives in protection of water against other detrimental effects of water (drought and water erosion)

To successively prepare for and adapt to the anticipated climate change by implementing adequate adaptation measures and to reduce the adverse impacts of excessive water erosion by storm water run-off.

a) To introduce adaptation measures specified in the National Programme for Mitigation of Climate Change Impact in the Czech Republic;

b) To involve other economic sectors and regions in long-term predictions of water demand while adapting to the anticipated climate change;
c) To prepare proposals for legislative measures to interconnect the development of river basin district plans and the process of dealing with comprehensive land consolidation;
d) To employ in the general plans for drainage of urbanized areas a concept of rain water use allowing its retention, infiltration and direct use;
e) To adopt requirements for the "good agricultural and environmental status" and the cross compliance requirements with the aim to increase water infiltration;
f) To prepare suitable research and development programmes;
g) To rehabilitate the functions of the existing water reservoirs by sediments removal;
h) To provide protection of localities suitable for artificial surface water storage for the purpose of compensation for a climate change impact.

2.3. Measures in flood protection and protection against other detrimental effects of water

2.3.1. With regard to effective proposals for preventive flood protection measures, to look for a suitable combination of landscape measures increasing the natural water retardation in the respective territory and technical measures affecting flood runoff. To base the proposals for flood protection measures on hydromorphological mapping of the river system, conceptual studies of rainfall-runoff conditions and studies of flood protection measures in coherent catchment areas, including analyses of factors affecting erosion and runoff conditions, with a pre-selection of areas and land plots constituting sources of erosion and surface runoff, and analyses of copceptual options of dealing with flood protection including cost-benefit analysis and risk analysis.

2.3.2. To successively prepare, until August 31, 2007, within the competence of the Ministry of the Environment, the concept of nature-friendly flood protection measures in selected priority areas:

a) In the main river basin of the Elbe
aa) The Nežárka River Basin
ab) The Dědina River Basin
ac) The Ploučnice River Basin
b) In the main river basin of the River Odra
The Opava River Basin
c) In the main river basin of the River Morava
ca) The Bečva River Basin
cb) The Dyje (Thaya) River Basin
cc) The Svratka River Basin.

2.3.3. To specify, until the end of 2007, within the competence of Ministry of Agriculture and the Ministry of the Environment and based on conceptual studies, a proposal of concrete measures in the individual priority areas:

a) In the main river basin of the Elbe
aa) A package of flood protection measures on the River Lužnice and the River Nežárka
ab) A package of flood protection measures in the Lower Vltava River Basin in the stretch Štěchovice – Mělník
ac) A package of flood protection measures in the Middle Elbe area in the stretch Kolín – Mělník
ad) Flood protection measures in the valley of the River Dědina
ae) A package of flood protection measures in the area of the Lower Elbe in the stretch Štětí – Křešice – Hřensko
af) Protection of Česká Lípa and the municipalities in the flood plain area of the River Ploučnice including flood protection measures in the Svitávka River Basin
ag) A package of flood protection measures and protection of municipalities in the area of the confluence of the River Ohře and the River Elbe
b) In the main river basin of the River Odra
ba) Flood protection measures to protect the municipalities on the Upper Opava River
bb) Flood protection measures in the Liberec - Jablonec conurbation
c) In the main river basin of the River Morava
ca) Flood protection measures in Olomouc area
cb) Flood protection measures in Litovel area
cc) Flood protection measures in Uherské Hradiště area and Staré Město area
cd) A package of flood protection measures in the downstream reach of the River Bečva and on its confluence with the River Morava
ce) Restoration of dry polders and controlled inundations downstream of the Nové Mlýny Reservoirs
cf) Increasing retention on the confluence of the River Morava and the River Dyje (Thaya)
cg) Controlled inundations in Kroměříž area
ch) Controlled inundations in Mohelnická brázda area.

To focus these measures matter-of-factly in line with the objectives of the Operational Programme Environment for the period 2007-2013, the Programme of Rural Development for the period 2007-2013 and the programme Flood Prevention Stage II for the period 2007-2012. Following a positive assessment, to reflect these measures in the river basin district plans and the general land use plans, and to start investor preparation of the measures.

2.3.4. To transpose EC Directive on Assessment and Management of Flood Risks, once it has been adopted, into the legal regulations of the Czech Republic and to start its implementation, especially to amend the Water Act and its implementing regulations.

2.3.5. To reflect in the river basin district plans priority flood prevention measures with a provable effect of flood risk mitigation which will be taken by river basin administrators,

watercourse administrators, regional authorities and municipalities as the investors. These measures include:

a) Landscape measures implemented in a nature-friendly manner (natural overflow, polders, watercourse channels improvements in built-up areas of municipalities);
b) Measures to optimize water regime of the landscape, to increase its retention capacity and to protect it against water erosion (especially to revitalize inappropriately regulated watercourse channels, inappropriate drainage and other interventions having adverse impacts on landscape water regime, to reduce the occurrence of adverse water erosion impacts, to reduce adverse impacts of surface runoff - infiltration zones and seeping depressed areas and flood storage rehabilitation);
c) Technical measures specified in the sub-programmes of the Ministry of Agriculture (Support of Flood Protection Measures with Retention, Support of Flood Protection Measures along Watercourses, Support of Increasing the Safety of Hydraulic Structures);
d) Torrent control in forests (Section 35 of the Act No 289/1995 on Forests, as amended).

2.3.6. To complete, by the end of 2008, designation of flood plain areas along major watercourses with regard to built-up areas, in areas suitable for building on according to the general land-use planning documentation or, if necessary, also in other areas in order to determine the size of the potential flood hazard areas and subsequently to reflect this in the river basin district plans.

2.3.7. The river basin district plans will specify, in co-operation with the regional authorities, areas requiring flood protection with regard to their significance, including the standards of their protection and the areas to be used to mitigate the floods.

2.3.8. To set up in the years 2008 – 2009 a long-term programme for research of extreme hydrological phenomena, by a coordinated procedure at the level of the Ministry of the Environment, in agreement with the Ministry of Agriculture and the Ministry for Regional Development and in co-operation with universities and other expert institutions.

2.3.9. To update by mid-2009, on the precaution principle, the existing system of area protection of localities hydrologically and morphologically suitable for surface water storage in the long-term prospect as one of the adaptation measures for the anticipated climate changes in the next 50-100 years which may show in the form of an increased extremity of dry period and flood situation occurrence. To amend, to this end, the Water Act (protected areas of natural water storage) by adding areas suitable for artificial surface water storage including the specification of rules governing area protection and the authorization to designate these localities by Government Order effective, at the latest, before the river basin district plans are approved. When preparing the list of localities suitable for surface water storage, to take into account the socio-economic impacts of the area protection and the negotiations with the affected regional authorities and municipalities.

2.3.10. To continue to develop, improve and modernize information system equipment of the flood forecasting and warning service at the national, regional and local levels. To use, to this end, the financial support from the Operational Programme Environment.

3. OBJECTIVES AND MEASURES IN WATER SERVICES

Under Article 2, sub-section 38 of Directive No 2000/60/EC water services are considered to include all activities providing to households, public institutions or any economic activity:

a) Abstraction, impounding, storage, intake, treatment and distribution of surface water or groundwater;
b) Waste water discharge with subsequent disposal into surface water.

The specific aim is to provide a trouble-free supply of safe and high quality water to the population and other water consumers and an efficient waste water disposal without adverse impacts on the environment at socially acceptable prices.

3.1. General objectives in water services

3.1.1. In the field of development and rehabilitation of water management infrastructure

a) To increase the number of inhabitants connected to public drinking water supply networks according to the objectives of the Protocol on Water and Health and to ensure access to drinking water for all, in particular to support the effort enabling also inhabitants in the outskirts of municipalities and inhabitants of small villages to get connected to a public drinking water supply network;
b) To support the provision of high quality water resources for individual supply of households that cannot get connected to a public drinking water supply network due to technical or economic reasons;
c) To accelerate rehabilitation of water supply networks which are obsolete and susceptible to failure and thus reduce drinking water losses in water supply networks below the level of 5,000 l/km/day, and in the long-term prospect to the level of the most advanced states of the European Union thus reducing the number of accidents and the associated adverse impacts, in particular on the municipal infrastructure.
d) To increase the number of inhabitants connected to the public sewerage system.

3.1.2. In the field of improving the quality and the failsafe nature of water services

a) To create conditions for permitted water use to facilitate a reliable provision of water services in a manner safeguarding that the water used for drinking water treatment meets all requirements for its quality under the Ordinance 428/2001, as amended;
b) To provide for a high level of reliability of the operation of hydraulic structures designed to provide water services including their safety; it concerns, in particular, the dams, the weirs and other hydraulic structures that have been in permanent operation for 30-100 years or more and will, in the intermediate and long-term prospect, require a radical rehabilitation (these rehabilitations must be carried out in a sensitive manner out of consideration for the protection of nature and landscape);
c) To support interconnecting water mains into integrated water supply systems with high capacity and high quality water resources;
d) To reduce the number of the cases of non-compliance with the drinking water quality limit values (expressed as the percentage of non-compliance with the limit values): regarding water supply systems with more than 5,000 inhabitants connected (up to 0.1 % for indicators with the lowest limit value (LLV) and up to 1.0 % for indicators with limit value (LV); regarding water supply systems with less than 5,000 inhabitants connected (up to 1.0 % for indicators with LLV, up to 3.0 % for indicators with LV).
e) To improve the systems safeguarding provision of water services in emergency and crisis situations;
f) To develop effective regulatory tools for the public administration with the aim to establish fair relations among the providers and the consumers of water services.

3.1.3. In the field of implementing the principle of cost recovery in water services

a) To assess, in the planning – economic analyses process, the current implementation of the "user pays, polluter pays" principle and to suggest appropriate modifications;
b) To strive for a long-term sustainable functional status of water management infrastructure constituting a condition for provision of water services.

3.1.4. In the field of water management planning and the concept of water supply and sewerage systems development

To draw up, by the end of 2007, the Plan of Water Supply and Sewerage System Development in the Czech Republic as a source document for the river basin district plans.

3.2. Measures in water services

3.2.1. To identify in the river basin district plans priority projects aimed at improving the quality of the supplied drinking water and supporting drinking water supply to the population, in a manner ensuring that these projects correspond to the objectives of subsidy titles and allocated financial resources in the Operational Programme Environment, the Programme of Rural Development for the period 2007-2013 and the programme of the Ministry of Agriculture "Construction and Refurbishment of Water Supply and Sewerage Systems Infrastructure".

3.2.2. To implement, in programmes of measures of the river basin district plans, for localities using water resources with unsa-

tisfactory surface water quality for abstraction for drinking water treatment, the measures specified in the Plans for Raw Water Quality Improvement.

3.2.3. To take into account, in updating water supply and sewerage system development plans for regions, the relevant measures included in the approved river basin district plans and relating to water services requirements and water protection. To focus, in drawing up the water supply and sewerage systems development plans, also on meeting the following objectives:

a) To improve the quality of the supplied drinking water;
b) To increase the level of safeguarding water resources and drinking water supply, especially in extreme climate situations;
c) To rehabilitate the drinking water supply systems that are obsolete and susceptible to failure with the aim to reduce the adverse impacts of accidents and thus water losses.

3.2.4. To specify in the river basin district plans, with the aim to increase the level of meeting the demand for the water services provided and primarily based on the technical and safety supervision outputs, the priorities for successive rehabilitation of water structures on watercourses associated with provision of water services, to assess the level of their long-term sustainable use or, as the case may be, the necessary level of financial support from the national resources by virtue of Section 102 of the Water Act.

3.2.5. To assess in the river basin district plans, based on economic analyses, the social, environmental and economic consequences of paying all costs of water services from revenues from the users.

4. SUMMARY OF MEASURES TO BE IMPLEMENTED INCLUDING STRATEGY FOR THEIR FUNDING

The structure of general measures and the specification of their potential funding from the public support resources to be employed when the Plan of Main River Basins of the Czech Republic is in force, is shown in Table No 4.1.

The strategy of funding the priority general measures shown in Table No 4.2 assumes successful arrangements allowing to draw, on a continuous basis, the expected volume of financial support from the EC Cohesion Fund to meet the Czech Republic's obligation to build and refurbish sewerage systems and waste water treatment plants in the transition period until 2010, as required by the EU Directive on municipal waste water treatment. The uncertainty results from the reservations of the European Commission about contracts for operation of water supply systems, sewerage systems and waste water treatment plants.

In case of the Operational Programme Environment the measures will also be co-financed from the state budget (the Chapter of the Ministry of the Environment) and the State Environmental Fund or, as the case may be, by the regional authorities. Co-financing on part of the regional authorities requires adequate increase of their revenues. The requirements for financial contribution of the investors' own funds as well as the terms and conditions of co-financing from the public purse will be specified in respective departmental guidelines.

Also financial support from the Programme of Rural Development and the programmes financed from the state budget assumes contribution of investors' own funds under the conditions and in the amount specified by the respective rules or, as the case may be, by the outputs of financial and economic analysis.

Measures shown in Table No 4.1. do not include, in particular, the necessary measures financed by own funds and associated with meeting the obligations of watercourse administrators in preserving the watercourse channels and the respective hydraulic structures, nor the measures in the field of water services provided by the owners and the operators of public water supply and sewerage systems. In addition, they do not include relevant measures taken by contractors in industry, agriculture and forestry, financed by own funds.

Table No 4.1 Funding of general measures from the financial support resources

Number	*Name of the measure (field of support)*	*Financial support resources*
	A. Measures for protection of water as a component of the environment	
A.1	Construction and refurbishment of wastewater treatment plants and sewerage systems in conurbations with more than 2,000 PE	OPŽP – Field of support 1.1 Reduction of water pollution The programme Construction and Refurbishment of Water Supply and Sewerage Systems Infrastructure (Sub-programme 229 313)
A.2	Construction and refurbishment of waste water treatment plants and sewerage systems in conurbations with up to 2,000 PE in areas requiring special protection	OPŽP – Field of support 1.1 Reduction of water pollution
A.3	Construction and refurbishment of waste water treatment plants and sewerage systems in municipalities with up to 2,000 PE	PRV – Measure III.2.1.1. Rehabilitation and development of villages The programme Construction and Refurbishment of Water Supply and Sewerage Systems Infrastructure (Sub-programme 229 313)
A.4	Technical measures regarding industrial polluters (removal of especially dangerous harmful substances)	OPŽP – Field of support 1.1 Reduction of water pollution
A.5	Revitalization of minor watercourses and small areas in municipalities	PRV – Measure III.2.1.1. Rehabilitation and development of villages PRV – Measure I.1.4. Land consolidation
A.6	Old environmental loads	OPŽP – Field of support 4.2 Removal of old environmental loads
A.7	Revitalization of watercourses and inappropriate drainage, improvement of watercourse passability	OPŽP – Field of support 6.4 Optimization of landscape water regime PRŘS – 1.1. Revitalization of natural functions of watercourses, Sub-programme 215 112 PRŘS – 1.3. Removal of transverse barriers on watercourses, Sub-programme 215 114

Number	Name of the measure (field of support)	Financial support resources
A.8	Implementation of land consolidation measures and comprehensive land consolidation measures (erosion reduction, improvement of the ecological stability of landscape)	OPŽP – c 6, Field of support 6.3. Rehabilitation of landscape features PRV – Measure I.1.4. Land consolidation
A.9	Riparian stand establishment and rehabilitation	OPŽP – Field of support 6, Field of support 6.3. Rehabilitation of landscape features
A.10	Grassing of arable land, in particular along watercourses	PRV – Measure II.1.3.3. Sub-measure Landscape management
A.11	Improvement of tree species and spatial composition of forests in especially protected areas	OPŽP – Field of support 6.3 Rehabilitation of landscape features
A.12	Afforestation of farmland	PRV – Measure II.2.1 Afforestation of farmland
A.13	Improvement of tree species composition of forest stand	PRV – Measure II.2.3. Forestry-environmental payments
A.14	Technical and biological measures to reduce euthropication of surface water	OPŽP – Field of support 1.1 Reduction of water pollution
A.15	Grassland management	PRV – Measure II.1.3. Agri-environmental measures
A.16	Complex monitoring, identification and assessment of the status of water quality and quantity (Complex monitoring of water)	OPŽP – Field of support 1.1 Reduction of water pollution
A.17	Environmental educational programmes and provision of environmental consulting	OPŽP – Field of support 7.1 Development of infrastructure for implementation of environmental educational programmes, providing consulting and education of the public
A.18	Improvement of human resources potential in the field of agriculture (landscape maintenance and protection of the environment, soil erosion, water pollution, improvement of biodiversity etc.)	PRV – Measure I.3.1. Special education and information activities, measures PRV – Measure I.3.4. Use of consulting services
A.19	Reduction of surface water and groundwater pollution from agricultural sources	PRV – Measure II.1 3.1. Sub-measure Environmental-friendly procedures PRV – Measure II.1.2.2. Water Framework Directive
	B. Measures for flood protection and protection against other detrimental effects of water	
B.1	Measures to reduce runoff from the watershed	OPŽP – Field of support 1.3 Reduction of flood risk
B.2	Building of polders larger than 50 thousand square meters	OPŽP – Field of support 1.3 Reduction of flood risk
B.3	Regulation of watercourse channels in municipal built-up areas in a nature-friendly manner	OPŽP – Field of support 1.3 Reduction of flood risk PRŘS – 1.1. Revitalization of the natural function of watercourses, Sub-programme 215 112 PRV – Measure III.2.1.1. Rehabilitation and development of villages

Number	*Name of the measure (field of support)*	*Financial support resources*
B.4	Improvement of landscape retention capacity and reduction of flood occurrence in a nature-friendly manner	OPŽP – Field of support 6.4 Optimization of landscape water regime PRŘS – 1.1. Revitalization of the natural function of watercourses (Sub-programme 215 112), PRŘS – 1.2. Establishment and revitalization of ecological stability system components associated with hydrological regime (Sub-programme 215 113), PRŘS – 1.4. Revitalization of landscape retention capacity (Sub-programme 215 115)
B.5	Erosion protection and reduction of adverse impacts of surface water runoff	OPŽP – Field of support 6.4 Optimization of landscape water regime PPK – A. Erosion protection
B.6	Flood protection measures with retention	Programme Support of Flood Prevention II, Sub-programme 129 122 PRŘS – 1.1. Revitalization of the natural function of watercourses (Sub-programme 215 112), PRŘS – 1.2. Establishment and revitalization of ecological stability system components associated with hydrological regime (Sub-programme 215 113), PRŘS – 1.4. Revitalization of landscape retention capacity (Sub-programme 215 115)
B.7	Flood protection measures along watercourses	Programme Support of Flood Prevention II (Sub-programme 129 123)
B.8	Improvement of safety of hydraulic structures	Programme Support of Flood Prevention II (Sub-programme 129 123)
B.9	Studies on rainfall-runoff conditions and specification of flood plain areas	Programme Support of Flood Prevention II (Sub-programme 129 125)
B.10	Fish ponds rehabilitation, refurbishment, and sludge removal, and construction of water reservoirs	Programme Support of fish ponds rehabilitation. refurbishment, and sludge removal, and construction of water reservoirs (Programme 129 130) PRŘS – 1.4. Revitalization of landscape retention capacity (Sub-programme 215 115) OPR – Measure 1.1. Investments in aquaculture production
B.11	Flood protection measures implemented as a part of land consolidation	PRV – Measure I.1.4. Land consolidation
B.12	Implementation of precautionary flood protection measures on minor watercourses and in their basins and erosion protection measures on forest land, repairs of bank scours, erosion scours and damming, stabilization of ravines on land designed to play the role of a forest.	PRV – Measure II.2.4.1. Rehabilitation of forest potential after forest disasters and introduction of precautionary measures Measures resulting from Section 35 of the Forestry Act
B.13	Development and modernization of information systems of the flood forecasting and warning service	OPŽP – Field of support 1.3 Reduction of flood risk

Number	*Name of the measure (field of support)*	*Financial support resources*
B.14	Support of processing the mapping data about flood hazard and flood risk	OPŽP – Field of support 1.3 Reduction of flood risk
	C. Measures in the field of water services	
C.1	Construction and rehabilitation of water treatment plants and drinking water resources in municipalities with more than 2,000 inhabitants	OPŽP – Field of support 1.2 Improvement of drinking water quality Programme Construction and Rehabilitation of Water Supply and Sewerage Systems Infrastructure (Sub-programme 229 312)
C.2	Construction and rehabilitation of water conduits and water distribution networks in conurbations with more than 2,000 inhabitants	OPŽP – Field of support 1.2 Improvement of drinking water quality
C.3	Construction and rehabilitation of water treatment plants and drinking water resources, and construction and rehabilitation of water conduits and water distribution networks in conurbations with up to 2 000 inhabitants in areas requiring special protection	OPŽP – Field of support 1.2 Improvement of drinking water quality
C.4	Construction and rehabilitation of drinking water supply systems in municipalities with up to 2,000 inhabitants	PRV – Measure III.2.1.1. Rehabilitation and development of villages Programme Construction and Rehabilitation of Water Supply and Sewerage Systems Infrastructure (Sub-programme 229 312)
C.5	Prospecting for and exploiting new groundwater resources to supply water to the population	OPŽP – Field of support 6.6 Groundwater resources appraisal
C.6	Geological and hydrogeological works for the purpose of re-evaluating the groundwater resources for water supply to the population	OPŽP – Field of support 6.6 Groundwater resources appraisal
C.7	Prospecting for, survey and assessment of the possibilities of controlled groundwater recharge by surface water (artificial groundwater recharge) from watercourses or reservoirs	OPŽP – Field of support 6.6 Groundwater resources appraisal

Explanation of abbreviations used in the table:
OPŽP = Operational Programme Environment
PRV = Programme of Rural Development
PRŘS = Programme of Revitalization of River Systems (since 2008 the programme Support of Rehabilitation of Natural Functions of Landscape
OPR = Operational Programme Fisheries
PPK = Programme for Landscape Conservation

Table No 4.2. shows the assumption of funding priority general measures from European Union funds support and their supplementary funding from national sources or, as the case may be, funding only from national sources. In cases when the Operational Programme Environment or the Programme of Rural Development do not allocate the expected financial amount for individual sub-programmes or sub-measures, a professional estimate is made for individual titles of financial support.

Table No 4.2 Assumption of funding priority general measures from European Union funds support and from national sources in mil. CZK in the period 2007-2013

Field of financial support (measure number)	*Assumed amount of financial support from EU funds*	*Assumed amount of funding from national sources*
OPŽP – Reduction of water pollution (A.1, A.2, A.4, A.14, A.16)	42 670.3	7 530.0*)
OPŽP – Flood risk reduction (B.1, B.2, B.3, B.13, B.14)	2 844.7	502.0*)
OPŽP – Improvement of drinking water quality (C.1, C.2, C.3)	11 378.7	2 008.0*)
OPŽP – Optimization of hydrological regime of landscape (A.7, B.4, B.5)	5 226.7	1 098.8*)
OPŽP – Rehabilitation of landscape features (A.8, A.9, A.11)	960.0	240.0*)
OPŽP – Groundwater resources appraisal (C.5, C.6, C.7)	240.0	60.0*)
OPŽP – Removal of old environmental loads (A.6)	2 205.3	389.2*)
PRV – Rehabilitation and development of villages (A.3, A.5, C.4)	5 077.9	1 692.6
PRV – Land consolidation (A.8, B.11)	4 225.9	1 408.6
PRV – Agri-environmental measure (A.10, A.15, A.19)	22 946.2	5 436.6
PRV – Afforestation of farmland (A.12)	1 765.5	441.4
PRV – Forestry-environmental payments (A.13)	372.6	93.2
OPR – Investments in aquaculture production (B.10)	60.0	20.0
MZe – Support of flood protection measures with retention (B.6)		1705.0

Field of financial support (measure number)	*Assumed amount of financial support from EU funds*	*Assumed amount of funding from national sources*
MZe – Support of flood protection measures along watercourses (B.7)		8040.0
MZe – Support of improving the safety of hydraulic structures (B.8)		700.0
MZe – Support of flood plain area designation and studies of rainfall-runoff conditions (B.9)		55.0
MZe – Fish ponds rehabilitation, refurbishment, and sludge removal and construction of water reservoirs (B.10)		5 250.0
MZe – Flood protection measures as a part of land consolidation (B.11)		1 000.0
MŽP- Programme of River Systems Revitalization (A.7, B.3, B.4, B.6, B.10)		2 400.0
MŽP- Programme for Landscape Conservation (B.5)		1 200.0
MZe – Measures resulting from Section 35 of the Forestry Act (B.12)		100.0

In case of financial support from the Operational Programme Environment the exchange rate is 1 EUR = 28.40 CZK
In case of the Programme of Rural Development the exchange rate is 1 EUR = 29.784 CZK
*) National public resources (15 % of the total resources) are constituted by the state budget (1 % of the total resources), the State Environmental Fund (4 % of the total resources) and the public funds of municipalities and regional authorities (10 % of the total resources)

EXPLANATORY NOTES TO ABBREVIATIONS USED IN THE TABLE:
OPŽP = Operational Programme Environment
PRV = Programme of Rural Development
MZe = Ministry of Agriculture
MŽP = Ministry of the Environment

5. REQUIREMENTS FOR DEVELOPMENT OF RIVER BASIN DISTRICT PLANS

Development of river basin district plans shall be based on this Mandatory Part of the Plan of Main River Basins of the Czech Republic and also on the following requirements broken down according to Annex No 2 to Ordinance No 142/2005 on planning in the field of water:

5.1. In the field of protection of water as a component of the environment

a) To reflect, in drawing up the river basin district plans, the measures of the Programme of Surface Water Pollution Reduction and, based on that, to propose specific changes in the current designation of surface waters suitable for life and reproduction of indigenous fish species and other aquatic animals in order to update and modify the designation of these waters.

b) Based on the monitoring results evaluation, the assessment of water bodies status, the expert opinion on possibilities to improve the status of water bodies and the water supply and sewerage systems development plans for the areas of regions, to identify in the river basin district plans the following projects for and to evaluate the impact of:

  ba) The missing municipal wastewater treatment plants and sewerage systems in conurbations with more than 2,000 PE;

  bb) The rehabilitation and intensification of municipal wastewater treatment plants to improve the waste water treatment technologies in conurbations with more than 2,000 PE;

  bc) The missing appropriate wastewater treatment in municipalities with up to 2,000 PE and furnished with an approved and well-functioning public sewerage system;

  bd) The missing appropriate wastewater treatment in municipalities with up to 2,000 PE where the impact of municipal pollution constitutes a major factor affecting the status of the relevant water body.

For individual projects in conurbations with more than 2,000 PE included in the updated list considered by the Government in the framework of the Updated Strategy for Funding the Implementation of Council Directive No 91/271/EEC on municipal waste water treatment, as well as for the relevant specific projects in conurbations with up to 2,000 PE, to draw up, in river basin district plans, time schedules for completing constructions which were not completed in 2008, including the method of funding. To observe, to this end, the need to meet the deadline on December 31, 2010 which will meet the requirement of the European Union for municipal waste water treatment under the Treaty of Accession of the Czech Republic to the European Union.

c) To identify in the river basin district plans priority projects aimed at rehabilitation of sewerage systems which are obsolete and susceptible to failure, in order to reduce the risk of uncontrolled groundwater contamination due to the leakage of discharged wastewaters. Following an agreement among the parties developing river basin district plans and the infrastructure owners, to draw up time schedules for preparation and successive implementation of the relevant projects. To assume, to this end, the framework of financial support resources specified in Tables 4.1 and 4.2, in particular the funds of the Operational Programme Environment. To select the projects especially on the basis of cost-benefit analysis and the effects favourable to water protection as well as on the basis of the approved water supply and sewerage system development plans for the areas of regions.

d) To identify, in the river basin district plans, the following projects:

  da) To improve the morphological and environmental status of watercourses including riparian features;

  db) To improve watercourse migration passage for fish and other aquatic animals and to support development of indigenous fish populations.

To base the selection of priority projects on water monitoring results, evaluation of the effectiveness of measures proposed and also on the Action Plan for construction of fish-passing facilities. To assume, to this end, the framework of financial support resources specified in chapter 4, in particular the funds of the Operational Programme Environment.

e) To propose in the programme of measures constituting a part of the river basin district plan, based on the water monitoring evaluation and the analysis of soil erosion risks, systemic measures in favour of the protection of water and ecosystems associated with water, relating to farmland and forest land management (derived from observing the principles of the "good agricultural and environmental status" and the standards) and also measures aimed at improving the quality of life in rural areas. To use, to this end, primarily the financial support resources included in the Programme of Rural Development in the Czech Republic for the period 2007-2013 and also in the Operational Programme Environment for the period 2007-2013. To implement, in particular, the measures derived from the process of carrying out land consolidation, sustainable use of farmland and forest land (especially grassing the land along watercourses, afforestation, reduction of adverse impacts of water erosion etc.), the measures to meet the requirements for management in vulnerable areas, environmentally sensitive management methods as well as the measures derived from minor water structures in municipalities with up to 2,000 PE (sewerage systems and wastewater treatment plants).

f) To identify in the river basin district plans, based on the water monitoring evaluation and the analysis of the water bodies status assessment, facilities designed for treatment or neutralization of wastewaters and sewerage systems discharging effluents from industrial pollution sources, that pose risks in terms of the inability to meet the requirements of national legal regulations and, for certain industries, those of Council Directive No 91/271/EEC on treatment of municipal waste waters.

5.2. In the field of flood protection and protection against other detrimental effects of water

a) To include in the river basin district plans a suitable combination of landscape measures increasing natural accumulation and retardation of water in the respective area and technical measures affecting flow rates in the individual priority areas specified under 2.3.3, stating also the assumptions of the time schedule for their preparation and implementation. To focus these measures matter-of-factly in line with the objectives of the Operational Programme Environment for the period 2007-2013, the Programme of Rural Development for the period 2007-2013 and the programme Flood Prevention Stage II for the period 2007-2012.

b) To reflect in the river basin district plans other priority flood prevention measures with a provable effect of flood risk mitigation, to be taken by river basin administrators, watercourse administrators, regional authorities and municipalities as the investors. To focus these measures matter-of-factly in line with the objectives of the Operational Programme Environment for the period 2007-2013, the Programme of Rural Development for the period 2007-2013 and the programme Flood Prevention Stage II for the period 2007-2012. These measures will, in particular, include:

ba) Landscape measures implemented in a nature-friendly manner (natural overflow, polders, watercourse channels improvements in built-up areas of municipalities);

bb) Measures to optimize water regime of the landscape, to increase its retention capacity and to protect it against water erosion (especially to revitalize inappropriately regulated watercourse channels, inappropriate drainage and other interventions having adverse impacts on landscape water regime, to reduce the occurrence of adverse impacts of water erosion, to reduce adverse impacts of surface runoff - infiltration zones and seeping depressed areas and rehabilitation of flood storage areas);

bc) Technical flood protection measures with retention (creating new flood storage capacity on watercourses, refurbishment and improvements of water reservoir structures with retention effect to increase the level of area protection, construction and refurbishment of buildings and structures in inundation areas);

bd) Technical flood protection measures along watercourses (to increase the discharge capacity of the respective watercourse /the channel and the surroundings/ in its close proximity) in urban areas including its stabilization, to build and refurbish flood banks for local protection of the area as well as relieving channels and tunnels and to increase flow capacity of weirs);

be) Improvement of hydraulic structures safety (refurbishment of weirs, refurbishment of outlet structures and emergency spillways and increase of their capacity);

bf) Torrent control in forests (Section 35 of Act No 289/1995 on Forests, as amended).

To document, in the river basin district plans, also the anticipated time schedule for development and implementation of these flood prevention measures.

5.3. In the field of water services

a) To identify, in the river basin district plans, priority projects aimed at improving the quality of the supplied drinking water and supporting drinking water supply to the population, in a manner ensuring that these projects correspond to the objectives of the subsidy titles and the allocated financial resources in the Operational Programme Environment, the Programme of Rural Development for the period 2007-2013 and the programme Construction and Refurbishment of Water Supply and Sewerage Systems Infrastructure (Sub-programme 229 312).

b) To implement, in programmes of measures of the river basin district plans, in localities using water resources with unsatisfactory surface water quality for abstraction for drinking water treatment, the measures specified in the plans for raw water quality improvement.

c) To specify in the river basin district plans, with the intention to increase the level of meeting the demand for the water services provided, based especially on the technical and safety supervision outputs, the priorities for successive rehabilitation of hydraulic structures on watercourses associated with provision of water services, to assess the level of their long-term sustainable use or, as the case may be, the necessary level of financial support from the national sources by virtue of Section 102 of the Water Act.

d) To assess, in the river basin district plans, based on economic analyses, the social, environmental and economic consequences of paying all costs of water services from revenues from the users.

6. REQUIREMENTS FOR DEVELOPMENT OF PLANS OF THE NATIONAL PARTS OF THE INTERNATIONAL BASINS OF THE RIVER ELBE, THE RIVER ODRA AND THE RIVER DANUBE

6.1. Contents of plans of the national parts of international basins of the River Elbe, the River Odra and the River Danube

Development of plans of the national parts of international river basins shall be based on the Plan of Main River Basins of the Czech Republic, the approved outputs of individual stages of river basin district plans development, the programmes for monitoring and detecting the status of water and the approved river basin district plans.

The plans of the national parts of international basins of the River Elbe, the River Odra and the River Danube shall be prepared by the Ministry of the Environment in co-operation with the Ministry of Agriculture, the river basin administrators and the regional authorities according to the relevant requirements of the European Commission and the international commissions for protection of the Elbe, the River Odra and the Danube.

To propose, based on the evaluation of the efficiency of co-ordination in the process of drawing up the plans of the national parts of international river basins, until mid-2008 a possible change in the amendment of the Water Act, which will become effective in the year 2009.

Development of plans of the national parts of international river basins of the Elbe, the River Odra and the Danube shall be based on Annex VII of Directive No 2000/60/EC. General chapters correspond to the structure of the already prepared reports for the European Commission, in particular the reports under Article 5 and Article 8. It is assumed that all characteristics and the information provided will be updated.

The plans of the national parts of international river basins of the Elbe, the River Odra and the Danube shall contain:

a) Characteristics of the national part of the respective international river basin;
b) Major pressures and impacts caused by human activities;
c) Identification and mapping of protected areas (Register of protected areas);
d) Monitoring networks and results;
e) Objectives, tasks and exceptions in the field of environment protection;
f) Economic analysis of water use;
g) Programmes of measures;
h) Register of more detailed programmes and plans, in particular the river basin district plans;
i) Measures in the field of public information and consulting;
j) Authorized bodies and agreements in the field of international co-ordination;
k) Contact points for obtaining source documentation.

6.2. Structure of sub-river basins for development of plans of the national parts of international basins of the River Elbe, the River Odra and the River Danube

6.2.1. International river basin of the Elbe

The countries situated in the International river basin of the Elbe have agreed to define and use co-ordination areas that are, for the national part of international river basin, specified and marked as:

5100 The Lower and Middle Elbe
5210 The Upper Vltava River
5240 The River Berounka
5290 The Downstream Vltava River
5300 The River Ohře and the Downstream Elbe
5400 The Rivers Mulde – Elbe – Schwarze Ester
5600 The River Saale
5800 The River Havel

6.2.2. International basin of the River Odra

The countries situated in the International river basin of the River Odra have agreed to define and use co-ordination areas that are, for the national part of international river basin, specified and marked as:

6200 The Upper Odra River
6300 The Middle Odra River
6400 The River Lužická Nisa

6.2.3. International river basin of the Danube

The countries situated in the International river basin of the Danube have agreed to define and use sub-units that are, for the national part of the international river basin, specified and marked as:

CZ1 – The Czech part of the sub-basin area of the River Naab, a tributary of the Danube
CZ2 – The Czech part of the sub-basin area of the River Regen, a tributary of the Danube
CZ3 – The Czech part of the sub-basin area of the River Ilz, a tributary of the Danube
CZ4 – The Czech part of the sub-basin area of the River Grosse Mühl, a tributary of the Danube
CZ5 – The Czech part of the sub-basin area of the Rivers Aist and Zwett, tributaries of the Danube
CZ6 – The Czech part of the sub-basin area of the River Dyje (Thaya), a tributary of the River Morava
CZ7 – The Czech part of the sub-basin area of the River Morava
CZ8 – The Czech part of the sub-basin areas of the tributaries of the Váh River, a tributary of the Danube

General part

A. POINTS OF DEPARTURE FOR DEVELOPMENT OF THE PLAN OF MAIN RIVER BASINS OF THE CZECH REPUBLIC

The European territory is in terms of hydrology, disregarding the national borders, divided into the individual basins of the main European rivers, called international river basins. At the same time, the European territory is divided by the main watersheds into individual sea-drainage areas. As the territory of the Czech Republic is a part of three sea-drainage areas – the drainage area of the North Sea, the Baltic Sea and the Black sea – and the corresponding international basins of the River Elbe, the River Odra and the River Danube, three main hydrological catchment areas were specified on the national territory for the sake of planning in the field of water:

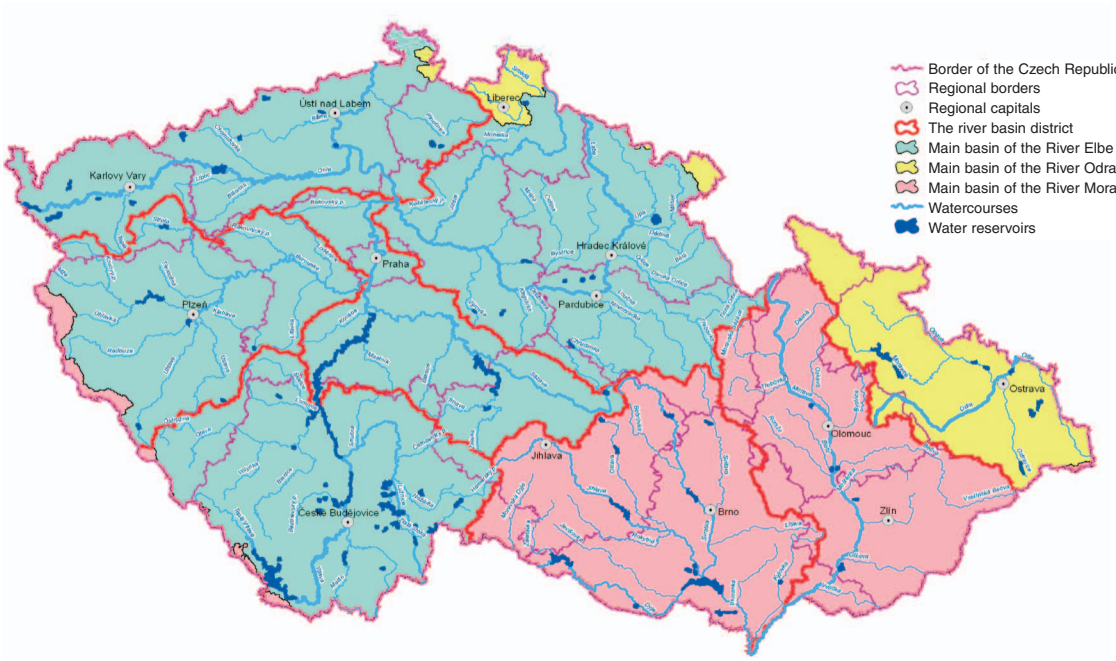
Main basin of the River Elbe
Main basin the River Odra
Main basin of the River Morava including other river basins of tributaries of the Danube (hereinafter referred to as the "Main basin of the River Morava")

Joint plans will be prepared for the international river basins by all countries with a part of their territory being situated in the international river basins. Co-ordination of these plans will be ensured by international commissions for water protection in the river basins of the Elbe, the River Odra and the Danube, on the basis of international agreements.

Table No 1 Areas of the main river basins of the Czech Republic

Sea-drainage area	*The North Sea*	*The Baltic Sea*	*The Black Sea*
Main river basins of the Czech Republic	**The River Elbe**	**The River Odra**	**The River Morava**
Total area of the river basin in km²	144 500	122 512	815 850
River basin area drained through the territory of the Czech Republic in km²	52 457	8 241	24 917
River basin area in the Czech Republic in km²	49 965	7 246	21 656
River basin area in the Czech Republic in % the total area of the Czech Republic	63,3	9,2	27,5

Figure No 1 Main river basins of the Czech Republic



A.1. Substantiation of the need for and the character of the Plan of Main River Basins of the Czech Republic

A.1.1. Purpose and character of the Plan of Main River Basins of the Czech Republic

The role of the Plan of the Main River Basins of the Czech Republic is to define, at the strategic level, national policy in the field of water for the general purpose of planning in the field of water laid down in the Water Act – to specify and harmonize public interests regarding

- Protection of water as a component of the environment
- Flood protection and protection against other detrimental effects of water
- Sustainable use of water resources and water management to meet the requirements for water services, in particular for the purpose of drinking water supply.

The Plan of Main River Basins of the Czech Republic sets out general objectives in the above mentioned areas, the main principles and rules of the national policy aimed at promoting the objectives set. To meet the objectives the plan suggests general programmes of measures harmonizing at the same time public interests and reflecting the social and economic context.

Once promulgated by a Government Order, The Mandatory Part of the Plan of Main River Basins of the Czech Republic will become a mandatory basis for the central administration authorities' proposals of measures conducive to the meeting of general objectives, including the raising of the funds to implement the measures proposed, for preparing conceptual documents relating to water and water management and for development of river basin district plans.

The General Part will become the basis for the work on the general objectives proposed. It will also become the basis for the execution of public administration, in particular for land-use decision-making process and decision making in water administration proceedings. Together with the river basin district plans it will constitute the source document for development of plans of the international basins of the River Elbe, the River Odra and the River Danube.

This first Plan of Main River Basins of the Czech Republic for the period 2007–2012 shall be examined and updated after six years, i.e. in the year 2012, however with regard to its strategic character it does not comprise only general objectives, subject-matter plans and general measures in the intermediate period but also, with regard to the implementation of the precaution principle, long-term objectives and intentions for the perspective of the first half of the 21st century.

General points of departure, including SWOT analysis of the current situation, future prospects assumptions and long-term forecasts based on the principles of national policy in the field of water as well as the commitments resulting from international co-operation and programmes of measures including the time schedule of their implementation and the methods of their funding, are elaborated, according to their character and concrete measures, for the national level and where appropriate, also for the level of the respective main river basin.

A.1.2. Main principles, rules and approaches

General objectives for the above mentioned fields of public interests are based on the principles and rules described below.

The objectives of protection of water as a component of the environment are based on protecting and improving surface water and groundwater status and the status of aquatic ecosystems as well as on protecting the ecological stability of landscape. The main principle is to meet the obligations resulting from the regulations of the European Union, in particular from Directive No 2000/60/EC, reflecting at the same time international agreements in the field of water.

The objectives of flood protection are based on an acceptable flood risk. The principles and rules are partly based on strategic documents already adopted in the Czech Republic and in the respective commissions for protection of the international basins of the River Elbe, the River Odra and the River Danube, the preparation of the European Union Directive on evaluation and control of flood risks, and partly on the knowledge and the results gained from the evaluation of floods in the years 1997-2006. They are completed by protection against other detrimental effects of water, in other words by protection against drought and excessive water erosion, that will increase the ecological stability of landscape and, at the same time, reduce possible adverse impact of climate changes in the long-term prospect.

The objectives aimed at meeting the requirements for water services as a prerequisite to continued social and economic development at the local, regional and national level are harmonized with regard to safeguarding sustainable use of water resources. In this part the Plan of Main River Basins of the Czech Republic lays down the possibilities of water resources development, water use limits and priorities for providing reliable, effective and high-quality water services. The main principle will be sustainable surface water and groundwater management.

The measures proposed shall observe the following principles:

- To deal with the causes of problems as a priority matter and only in the event this is not possible from the social or economic point of view, to focus the measures solely on remedying the consequences;
- To propose measures in such a manner that the status in another part of the area is not impaired or that the measure in question is not undermined by the absence of solution of another problem or area;
- To make use of systemic combinations of landscape measures and technical measures, based on detailed knowledge of the area characteristics;
- To look for, as a priority matter, a solution based on exploitation of the existing structures if a technical measure is the most effective one or necessary for dealing with the problem.

This Plan of Main River Basins of the Czech Republic does not include objectives and measures associated with water use for navigation, recreation and generation of electric power if these water uses do not relate to protection of water as a component of the environment, flood protection and protection against other detrimental effects of water and the meeting of the requirements for water services. The significance and impacts of these water uses are, however, evaluated in the general scenarios of the river basin district plans as well as in the general scenario of the Plan of Main River Basins of the Czech

Republic which is based on departmental or, as the case may be, regional development documents (See Appendix No 1).

For the proposal presenting period 2007–2012, the National Energy Concept does not consider, in the process of meeting the indicative objectives of a certain percentage of renewable resources in the electric power generation, a major percentage of hydroelectric power potential exploitation; the aim will primarily be to exploit this potential in a complementary manner in a multi-purpose use of hydraulic structures and in connection with utilization of the respective localities for construction of small hydroelectric power plants.

Waterways development shall be based on the General Plan of Transport Infrastructure Development for the period 2007–2013, after it has been approved by the Government of the Czech Republic, and on the new assessment of the intention to conserve the area of the corridor for construction of the Danube-Odra-Elbe navigation canal according to the Resolution the Government of the Czech Republic No 561 of May 17, 2006, on the Policy of the Spatial Development of the Czech Republic.

To meet the general objectives, general measures are proposed for promotion of the above mentioned public interests. They include in particular:

- Proposed changes to legislation,
- Proposed economic and administration tools,
- Key measures complementing water management infrastructure, with a significance or an effect exceeding the territories of regions or river basin districts,
- Key nature-friendly measures,
- Key standards of flood protection and measures to coordinate flood protection in coherent areas of river basin districts,
- Good practice propositions,
- Measures to support economical and environmentally-sensitive use of water resources and technologies not stressing aquatic environment,
- Suggestions for R&D focus and promotion of international co-operation,
- Information tools for communication with the public and educational and demonstration projects.

The time schedule proposed for these measures specifies their implementation and funding strategy. The general measures proposed constitute the basis for design of mandatory parts of the Plan of Main River Basins of the Czech Republic.

The method of development, publication and negotiation of the Plan of Main River Basins of the Czech Republic is given by requirements specified in the Water Act and in Ordinance No 142/2005 on Planning in the Field of Water as well as in Act No 100/2001 on Environmental Impact Assessment and on amendment to certain laws as amended by Act No 93/2004.

An important principle in the process of drawing up the Plan of Main River Basins of the Czech Republic was to inform and consult the public. The draft Plan of Main River Basins of the Czech Republic was published in a procedure under the Ordinance on Planning in the Field of Water, and, in a form modified according to the evaluation of comments, submitted for an opinion on the impact of the concept on the environment (SEA). Public hearing on SEA primarily produced comments on the draft update of the list of localities suitable for surface water storage; the result is a change in the method of preparing this update.

The final Draft Plan of the Main River Basins of the Czech Republic divided in the Mandatory Part and the part called the Concept of Development in the Field of Water for the period 2007-2012 shall be submitted by the plan producer to the Government for approval, together with the report on evaluation of comments made by the public and water users, the opinion under the Act on Environmental Impact Assessment and the report on inclusion of requirements and conditions presented as a part of this opinion.

Information on the approval of the Plan of Main River Basins of the Czech Republic shall be published in the Government Journal for Regional and Local Authorities and on the Public Administration Portal. This will be followed by preparing Government Order promulgating the Mandatory Part of the Plan of Main River Basins of the Czech Republic.

The approved Plan of Main River Basins of the Czech Republic shall be passed on to the regional authorities and shall be made available for the public, as long as it is in force, as a hard copy at the premises of the Ministry of Agriculture, the Ministry of the Environment and the regional authorities, and in the electronic form on the Public Administration Portal. In the process of co-ordinating the development of international river basin plans, the approved Plan of Main River Basins of the Czech Republic shall be submitted to the International Commission for Protection of the Elbe, to the International Commission for Protection of the Odra River against Pollution and to the International Commission for Protection of the Danube.

A.2. Account of significant initial conditions for development of the Plan of Main River Basins of the Czech Republic

The key point of departure for planning in the field of water in the Czech Republic is to define, on the one hand, the abundance of water resources available and the exploitable water resources, and, on the other hand, to identify the requirements for water use and water services that are based on utilization of the existing water management infrastructure.

Water resources of the Czech Republic include

- Water resources that may be affected, in terms of their number or quality, by human activities and that are currently used or can be used in the future while observing the principles of their sustainable use and respecting the interests of the environment and biodiversity in aquatic ecosystems,
- Other waters that are not used or cannot be used under environmentally and economically acceptable conditions, e.g. waters in swamps, dead-end branches, wetlands and unexploitable groundwaters in rock environment etc. These waters are, however, important in terms of biodiversity, landscape energy balance, climate and water storage in the landscape.

Presence of water in the Czech Republic depends almost exclusively on atmospheric precipitation and its transformation in the natural environment. Water inflow from the territories of neighbouring countries increases the abundance of water in the Czech Republic only insignificantly.

Table No 2 shows the overall summary of water resources and renewable water resources in mil. m^3, in time series of the last ten years compared with the long-term annual mean values.

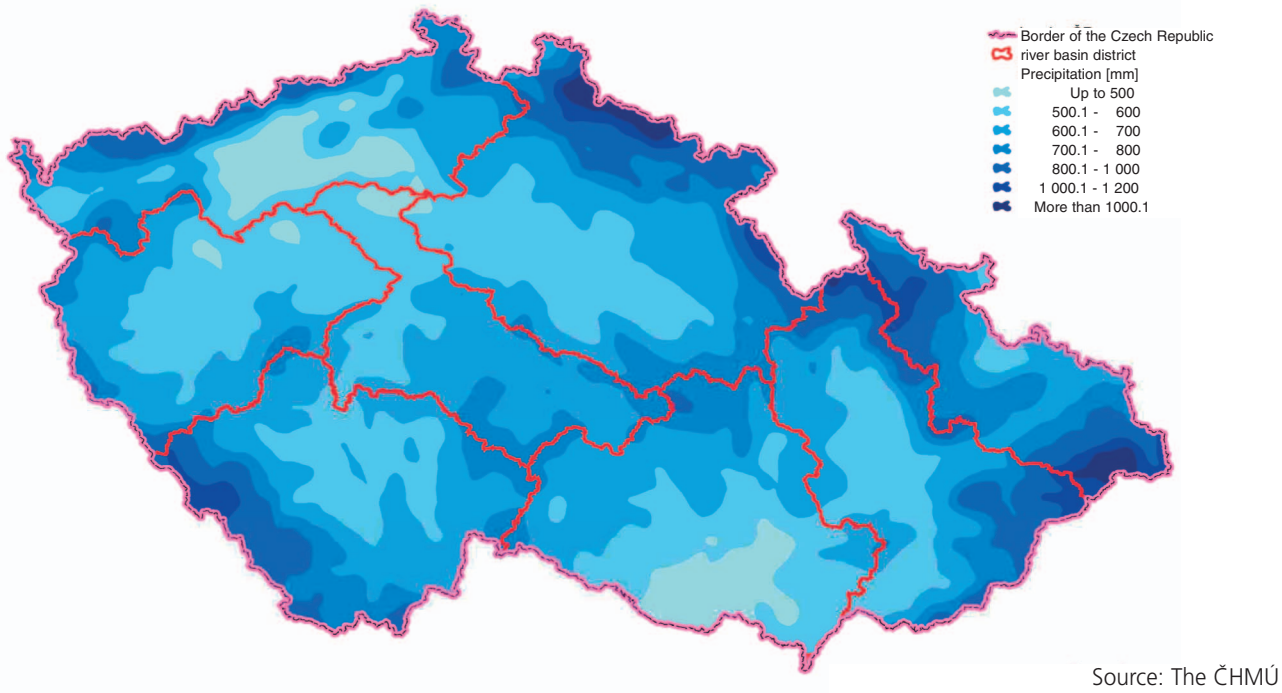
Table No. 2 Water resources of the Czech Republic

Indicator	Long-term annual mean value	Annual values (mil. m³)									
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Precipitation	56 018	54 890	57 809	56 153	49 291	54 733	63 960	71 298	40 695	53 629	57 730
Evapotranspiration	40 654	37 461	39 859	42 750	35 381	40 353	48 537	48 533	29 319	41 473	42 872
Annual inflow [1]	719	825	653	541	550	573	761	1341	524	640	781
Annual discharge [2]	16 084	18 254	18 603	13 944	14 460	14 953	16 184	24 106	11 900	12 796	15 639
Exploitable resources of surface water [3]	4 891	7 086	6 200	4 825	4 875	4 789	6 600	6 506	3 758	4 270	5 489
Exploitable resources of groundwater	1 353	1 380	1 430	1 330	1 390	1 204	1 440	1 625	1 195	1 224	1 305[4]

Source: The Czech Hydrometeorological Institute

Explanatory notes:
The values are shown in mil. m³
1) Annual water inflow to the territory of Czech Republic from neighbouring countries
2) Annual discharge from the territory of the Czech Republic
3) Defined as 95% compliance with the specified flow rate values in main river basins
4) This figure is a qualified estimate

Figure No 2 Distribution of long-term precipitation amount (mm) for the period 1961 – 1990 (standard period according to the World Meteorological Organization)



Source: The ČHMÚ

Table No 3 Hydrological characteristics of the main river basins

Indicator	Main river basins of the Czech Republic			The Czech Republic in total
	The River Elbe	The River Odra	The River Morava	
Average altitude of the river basin [m above sea level]	446	443	397	432
Long-term average discharge in the main watercourse of the river basin in the boundary profile [m³s⁻¹]	313	32	101	-
Specific discharge [l.s⁻¹.km⁻²]	6.1	10.8	4.8	6.1
Average annual precipitation amount [mm]	653	808	640	661
Annual runoff depth [mm]	192	341	152	195

Main water uses comprise

– Surface water and groundwater abstractions for the purposes specified in the breakdown which is monitored in water management balance (drinking water supply, once-through cooling, closed-circuit cooling, irrigation, animal production, industrial technologies and other purposes, e.g. services) and the subsequent discharge of these waters;
– Exploitation of the power generating potential of surface waters;
– Exploitation of surface waters for fish farming or water poultry farming or, as the case may be, other aquatic animals.

These main water uses always require permission for surface water or groundwater use issued by the respective water authority. In addition to this, surface waters may be used, without permission of water authority, for navigation, recreation or for another kind of general use of these waters in compliance with the Water Act.

Water management infrastructure

Table No 4 shows type division of water management infrastructure in the individual main river basins associated with water use and provision of water services.

Table No 4 Water management infrastructure associated with water use and provision of water services

Parts of infrastructure	*Units*	*Main basin of the River Elbe*	*Main basin of the River Odra*	*Main basin of the River Morava*	*The Czech Republic in total*
Significant watercourses	km	11 574	1 359	3 988	16 921
Minor watercourses	km	34 907	6 017	16 411	57 335
Regulated watercourses	km	13 333	1 448	6 513	21 294
Navigation canals	km	10	0	21	55
Navigation chambers	number	47	0	13	60
Waterways	km	304	0	54	358
Water reservoirs	number	385	8	195	588
Total storage capacity of water reservoirs	mil. m^3	2 544	386	482	3 412
Total available (live) storage capacity of water reservoirs	mil. m^3	1 765	304	269	2 338
Total controllable flood storage capacity of water reservoirs	mil. m^3	176	38	77	292
Dry reservoirs (polders)	number	15	0	21	36
Total flood storage capacity of polders	mil. m^3	2	0	150	152
Weirs	number	1 143	60	235	1 438
Water mains (without service connections)*)	km	38 363	8 765	16 250	63 378
Sewers (without service connections) *)	km	20 687	3 762	5 150	29 599
Wastewater treatment plants *)	number	1 201	102	412	1 715
Wastewater treatment plants – capacity *)	thousand m^3/day	2 696	490	671	3 857
Installed capacity of hydroelectric power plants	MW	891	13	1 393	2 289

Source: Preparatory documents for river basin district plans – economic analysis (2004)

*) Relates to public water supply and sewerage systems (data provided by the main operators in the survey of the Czech Statistical Office)

Other initial conditions for development of the Plan of Main River Basins of the Czech Republic are derived primarily from the data and the assessments included in the annual Reports on the Status of Water Management of the Czech Republic and also from the data in the preparatory documents for river basin district plans or, as the case may be, from other conceptual documents. Appendix No 1 gives an account of the main source documents used for development of the Plan of Main River Basins of the Czech Republic.

The significant initial conditions are described below, divided into the following categories:

- Protection of the status of surface water and groundwater as well as aquatic ecosystems and protection of ecological stability of landscape;
- Flood protection and protection against other detrimental effects of water;
- Surface water and groundwater management in their sustainable use;
- Water services in the field of public water supply and sewerage systems.

The need to forecast the future development of the main impacts significantly affecting in the prospect until the year 2012 water status, water use and water services in the main river basins of the Czech Republic, resulted during the preparatory work in producing the so called General Scenario evaluating the status and the forecast of future development in various branches of economy (industry, agriculture, energy sector, water management – river basin administration and watercourse administration, drinking water supply from public water supply systems, construction of sewerage systems and municipal wastewater treatment, water transport and tourism and water recreation). These branches of economy were selected with regard to the assessment of "significant pressures" on water status identified in the preparatory documents for river basin district plans prepared in 2004. The economic sector assessment structure requested by the European Commission was also taken into account. Each assessed branch of economy comprises a general evaluation on the national level and subsequently the particulars, data and information regarding the individual main river basins of the Czech Republic. For the respective branch of economy, the following information is provided, depending on its nature and the data available:

- Key water use or key water service;
- Current status of water use (quantity statement and description);
- Key factors affecting the anticipated development trends till the year 2012 (demographic impacts, economic factors, social factors, climate aspects and requirements for improvement of the environment).

With regard to the strategic role of the Plan of Main River Basins of the Czech Republic in the long-term prospect, it is necessary to take into account climate changes expected in the next fifty to hundred years that will manifest themselves in the field of water by an increased extremity of dry periods or flood situations occurrence. Pessimistic scenarios and hydrological models used indicate a possible decrease of the average discharge in watercourses by as much as 40 % in the perspective of the first half of the 21st century. Similar decrease is expected for the minimum flows in watercourses and for groundwater tables. Higher soil evaporation in the spring-autumn period will result in runoffs showing mainly decreasing trend. Decreasing inflows and increasing evaporation will impair the capacity of water reservoirs to safeguard and compensate water abstractions. Decreasing water flow rates and rise in water temperature will also increase the risk of higher eutrophication and impaired water quality. These changes will not manifest themselves in a leap but gradually.

All sectors of the economy will have to adapt to the anticipated impacts of climate change. However, as the climate change impact estimates show considerable variability and no estimates of the expected requirements of individual sectors for water resources are known yet (in particular as regards agriculture, industry and drinking water supply), this first Plan of Main River Basins of the Czech Republic lays down a strategy based on the precaution principle.

A.2.1. Protection of the status of surface water and groundwater as well as of the aquatic ecosystems and protection of ecological stability of landscape

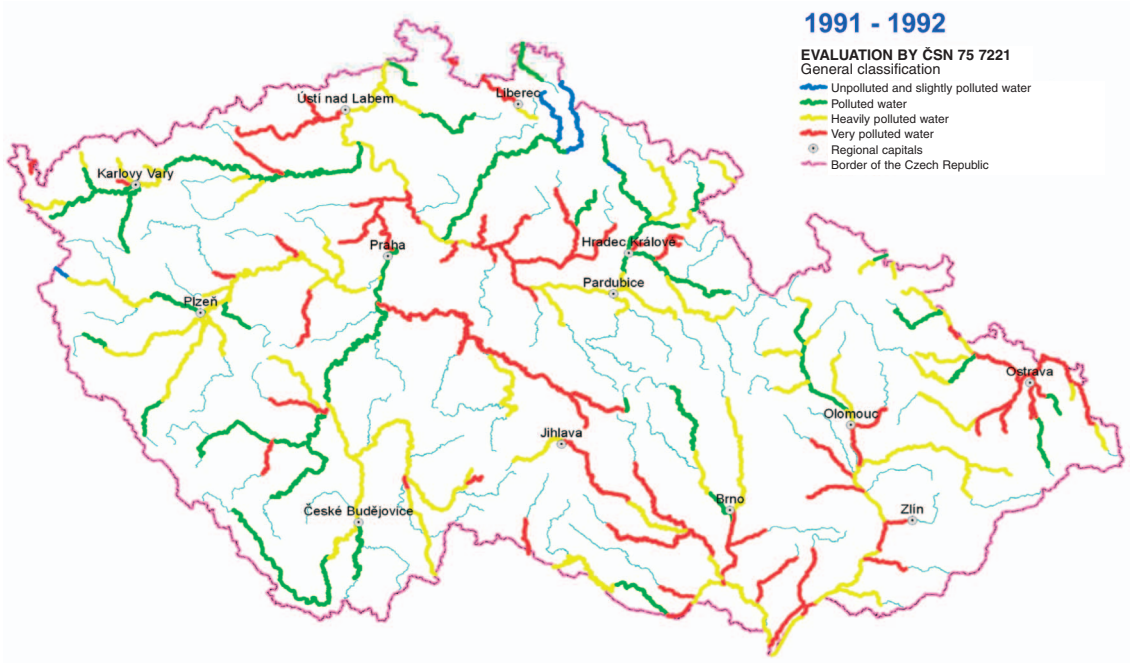
The status of surface water and groundwater has been significantly improving in the last 15 years. The monitored profiles of surface water quality showed a significant decrease in the number of the monitored watercourses with the worst water quality and a gradual decrease in the number of watercourses with water quality mark class V. At present, the main watercourses mostly show the values corresponding to quality mark class II. Also the quality of surface water in minor watercourses has considerably improved.

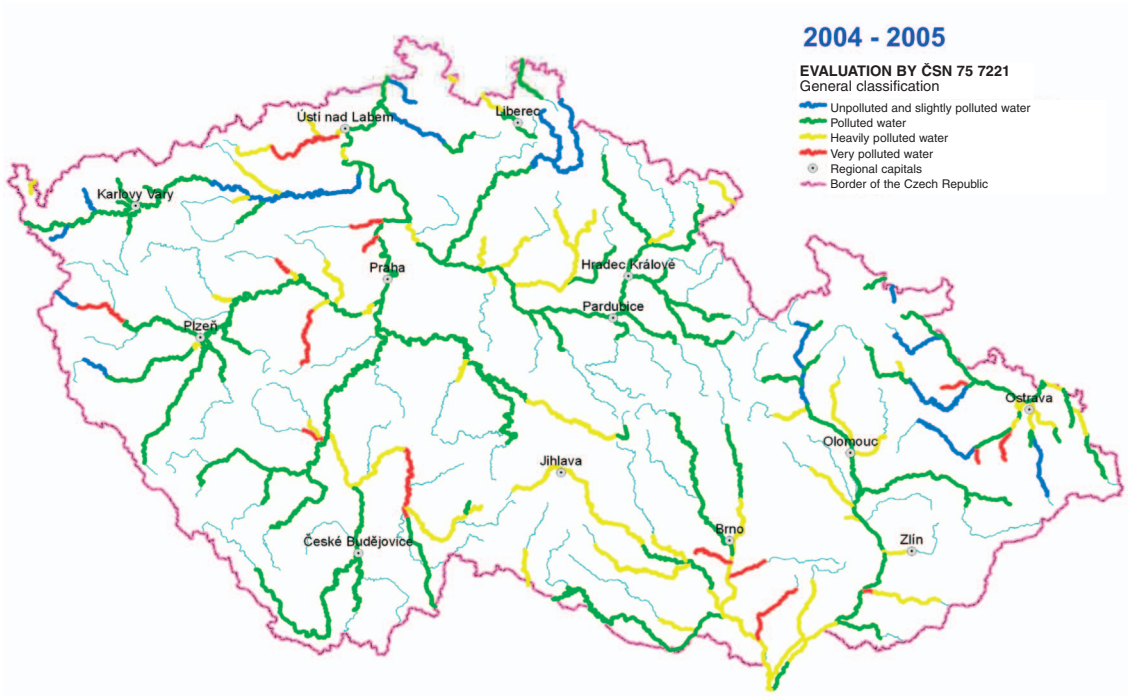
Surface waters show an unsatisfactory level of eutrophication supported by an excessive load of nutrients, i.e. phosphorus and nitrogen, resulting from their insufficient removal in point pollution sources and their infiltration into the aquatic environment from non-point sources of pollution. Generation of conditions favourable to eutrophication is also supported by poor landscape structure (drainage of wetlands, missing anti-erosion landscape features) and intensive fish farming. In the summer period almost all water reservoirs suffer from eutrophication. The Czech Republic, compared with other member states of the European Union, shows high percentage of areas where bathing must be prohibited due to excessive presence of cyanobacteria.

The comparison of the years 2005 and 1990 shows that the volume of organic pollution discharged from point pollution sources to watercourses decreased with regard to the BOD_5 indicator from 150 thousand t/year to 10 thousand t/year, i.e. by 93 %, and with regard to the COD_{Cr} indicator from approximately 410 thousand t/year to approximately 60 thousand t/year, i.e. by 85 %.

With regard to surface water treatment for production of drinking water (in the Czech Republic approximately 50 % of drinking water is produced by means of surface water treatment) and also with regard to surface water use for bathing (watercourses cannot be in most cases considered as suitable for bathing from the sanitary point of view), the microbial pollution status is unsatisfactory. Microbial pollution comes mainly from municipal sources of pollution.

Figure No 3 Quality of water in watercourses in the years 1991 - 1992 and in the years 2004 - 2005



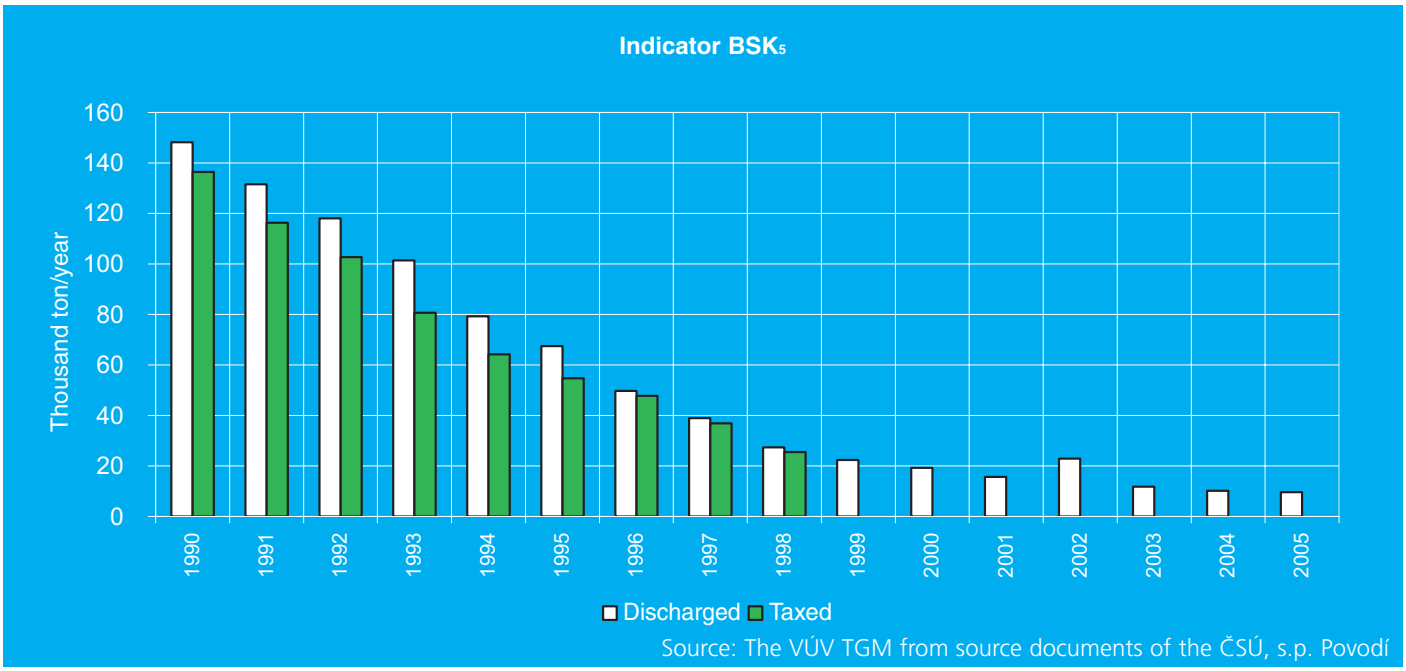


Source: The VÚV TGM from the source documents of the ČHMÚ Povodí

The surface water status in watercourse stretches downstream some industrial plants is unsatisfactory with regard to the content of harmful and especially dangerous harmful substances. This problem shows not only in surface water but also in suspended sediments and biomass. Implementation of a number of measures currently decreased the content of certain harmful substances, such as mercury, to an acceptable level. It is, nonetheless, necessary to continue reducing the content of other substances – primarily polyaromatic and chlorinated carbohydrates.

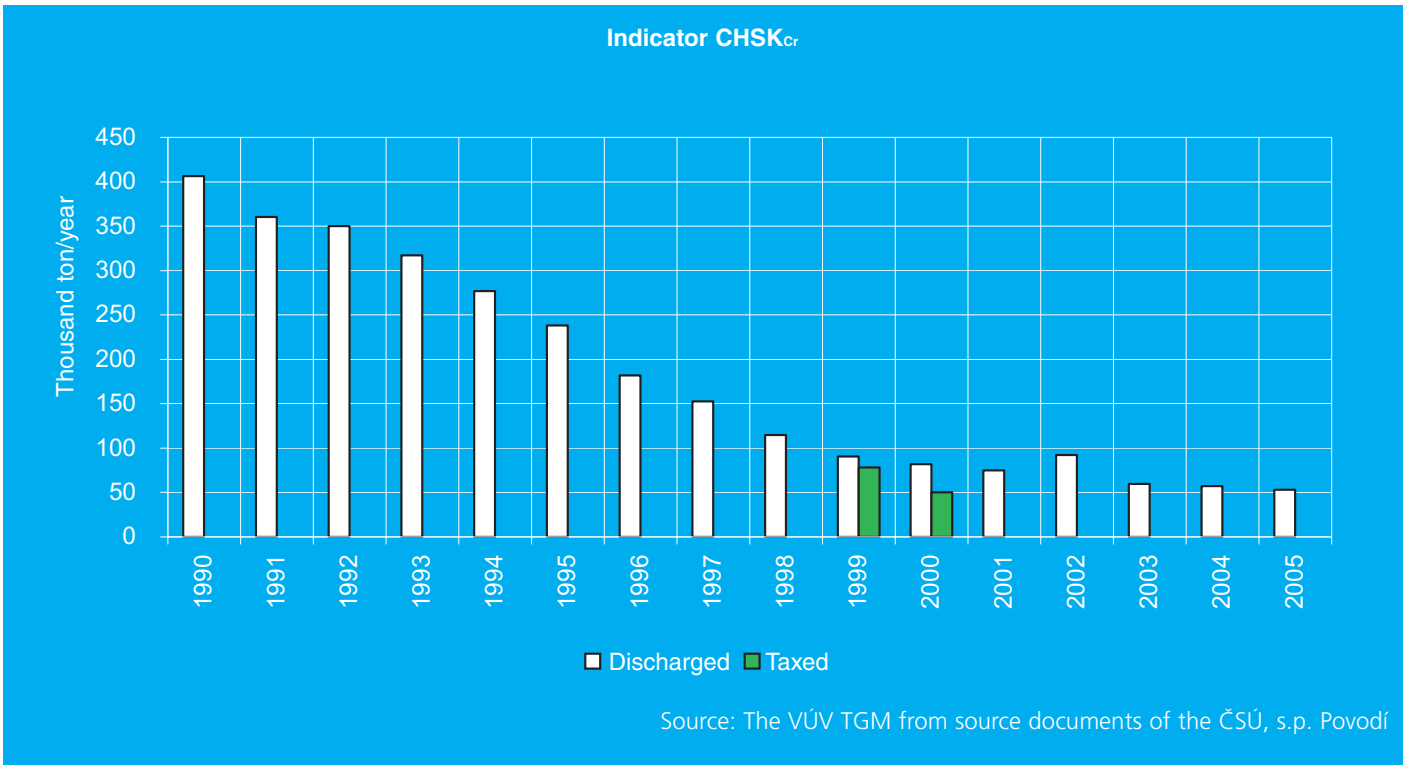
At present there is a lot of information about the way the landscape sphere reacts to various types of changes, or more precisely to the disturbance of its balanced status or ecological stability. For hydric ecosystems the adverse impacts of anthropogenic activities may be defined as disturbance of hydrological regime in a locality (such as extreme variability of flow rates), disturbance of energy and substance flows (such as erosion manifestation), deterioration of substance quality indicators of natural soil fertility, surface water and groundwater contamination, disappearance of transition eco-

Figure No 4 Development of discharged and taxed pollution using BOD_5 indicator



Source: The VÚV TGM from source documents of the ČSÚ, s.p. Povodí

Figure No 5 Development of discharged and taxed pollution using COD_{Cr} indicator



Source: The VÚV TGM from source documents of the ČSÚ, s.p. Povodí

systems (ecotones), waste load on the ecosystem, unbalanced species composition of biota, interruption of migration routes caused in particular by large scale built-up areas.

Special attention must also be paid to eliminating or mitigating the morphological impacts of human activities. This concerns primarily regulation of watercourses through pipelines or channel straightening in certain watercourse stretches, large extent of inappropriate stream-channel regulations and improvements of the adjacent areas as well as transverse barriers blocking the passage of fish and aquatic animals.

The current adverse approach to landscape use and its management generates unsuitable conditions for water protection resulting in, among other things, excessive soil erosion, high substance losses of nutrients, contamination of water by other foreign substances, reduction of landscape stabilizing components etc.

The most significant adverse anthropogenic changes in the aquatic environment include capacity-increase of large watercourses, drainage of land, straightening amelioration of minor watercourses, transverse structures in watercourse channels and head-races. The changes in hydrological regime of the landscape manifest themselves by:

- Adverse changes in discharge and sediment runoff regime,
- Larger variability of surface runoff and groundwater runoff,
- Decreased intensity of the natural purification capacity of watercourses caused by the loss of channel complexity, pools, side channels and stream branches and wetlands,
- More demanding requirements for river bed resistance in connection with higher velocity of flow,
- Accelerated flood discharge (runoff) in downstream areas due to the increased hydraulic capacity of channels and the reduction of inundation in flood plain areas,
- Decreased groundwater supplies,
- Reducing migration of aquatic animals or even making this migration impossible by building transverse structures and generating unsuitable flow conditions in the watercourse channels,
- Limiting the possibilities for permanent presence of indigenous aquatic animal species by reduction of channel complexity which is connected to the loss of longitudinal and transverse complexity of the channel,
- Reduction of biodiversity on the adjacent drained fields,
- Reduction of flood protection, caused by artificial interventions in the natural watercourse channels and flood plain areas.

A.2.2. Flood protection

In the Czech Republic water overflows the banks of watercourse channels in flood situations with 1% probability of occurrence (so called one-hundred-year flood), inundating the total area of 2,481.9 km^2 in the vicinity of watercourses, while the area of 1,303.4 km^2 from this total area is in some way protected against more frequent floods.

The occurrence of floods in the Czech Republic is, in absolute majority of cases, caused by meteorological causal phenomena with their consequences being manifested in the national territory. The floods coming from neighbouring countries may occur, in a more significant scale, only on the River Dyje (Thaya) and to a certain extent on the upper reaches of the River Lužnice. Flood situations on tributaries of the Ohře River from the German territory and on tributaries of the River Olše and the River Stěnava from Poland pose a local threat to the territory of the Czech Republic.

The basic types of floods posing a threat to the territory of the Czech Republic include:

- Summer floods caused by long lasting regional rainfall of high intensity with large precipitation amounts, being manifested by significant impacts on medium and larger watercourses
- Winter and spring floods are caused by rapid snow pack melt, often in combination with rainfall; these floods occur most often on foothill watercourses, and in case of more extensive rise in temperature combined with rainfall hit even the large lowland watercourses,
- Summer floods caused by short lasting rainfall of high intensity pose a local threat that can occur wherever in the territory of the country with possible disastrous consequences on minor watercourses draining especially slanting areas; magnitude of this threat is augmented by difficulty to forecast such events in more detail,
- Floods caused by ice phenomena on watercourses in winter period, brought about by ice jams or ice packs that may occur on watercourses of all categories; the flood intensity is determined by the combination of local conditions in watercourse channels and the presence of causal meteorological phenomena (long frost periods alternated by temperature inversions or sudden rise in temperature),
- Special floods which are situations that may occur below water impounding hydraulic structures, in emergency condition or in case of emergency operation on hydraulic structures.

Flood disasters in the years 1997 and 1998 gave rise to the need to prepare the Strategy of Flood Protection in the Czech Republic (hereinafter referred to as the "Strategy") which was adopted by the Government of the Czech Republic in April 2000. Adopting this Strategy and reflecting some of the principles of the Strategy in the new Water Act in 2001 significantly improved the system of flood protection level; it turned out, however, that the consistent implementation of its principles is a long-term issue.

The subsequent extreme floods in the years 2002 and 2006 showed again the disastrous consequences of all the above mentioned types of floods and the experience gained became an impulse to seek improvements in all aspects of flood protection.

In April 2006, in connection with preparing the update of the Strategy, the Year 2000 Strategy Implementation Analysis (hereinafter referred to as the "Analysis") was elaborated with the aim to verify the progress in implementing the strategy and to propose, on that basis, a change in implementing certain principles included in the Plan of Main River Basins of the Czech Republic.

The Analysis also includes assessment of the above mentioned principles of the Strategy with the following conclusions completed by certain important activities pursued since April 2006.

Preventive flood protection measures are the most effective form of protection

Preventive flood protection measures are implemented in concrete terms through a package of flood prevention programmes in the framework of programme financing.

The Programme of Flood Prevention II approved by the Government comprises also a methodology for evaluation of the effectiveness and practicality of technical measures.

The importance of flood prevention and implementation of flood protection measures reflected also in the comprehensive concept of planning in the field of water in accordance with the Water Act.

Owners and administrators of real property, possibly including organizations at the regional, district and municipal levels or individuals, must participate in safeguarding the implementation of preventive measures to mitigate the detrimental effects of floods

This principle was reflected in the provision of Section 86 of the Water Act. Despite of partly involving municipalities and regional authorities in co-financing to implement projects included in the established programmes, little progress is made in more significant financial involvement of the protected entities in implementing flood protection measures of trans-local or trans-regional nature. An exception was the funding of flood protection measures of the Capital City of Prague solely from the funds of the municipality. So far there is no exact determination of the individual entities' responsibility for preparing and implementing preventive measures with a link to their co-financing regarding the settlement of the investment and operational costs of these measures. Also no progress was made in setting up a motivating environment compelling the entities exposed to threat to minimize the requirements for flood protection, to maximize the effect of protection measures and to reduce on their own initiative the damage potential in the area exposed to threat by eliminating conflicting activities.

Effective preventive measures must be implemented in a systemic manner in geographically coherent (hydrological) catchment areas and with regard to interconnection of the impacts of individual measures along watercourses

This principle is being implemented especially in the Programme for Flood Prevention under the responsibility of the Ministry of Agriculture where the selection of the individual measures of preventive nature is a subject to an assessment of efficiency in the geographically coherent catchment area. This principle is implemented by producing comprehensive studies on rainfall-runoff conditions and flood protection measures in coherent catchment areas, integrating measures to increase the landscape retention, measures allowing to define inundation areas, measures for flood discharge storage in water reservoirs or, as the case may be, in polders and flood banks.

To make flood protection effective it is necessary to find an appropriate combination of landscape measures increasing natural accumulation and retardation of water in the respective area and technical measures to affect flood discharge

With certain exceptions, the declared conceptual approach to implementing the technical and nature-friendly measures has not been employed in the recent period, primarily due to the absence of a strategic document for proposing and implementing landscape measures in the Czech Republic. Consistent implementation of this principle will require concentration of adequate funds for their preparation.

To support rehabilitation and stabilization of landscape water regime, a Programme of Revitalization of River Systems was prepared under the responsibility of the Ministry of the Environment. This programme allows to provide funds for measures to reduce the velocity of runoff from the respective area and to increase biological diversity of landscape. In October 2006 the Government of the Czech Republic approved the Operational Programme Environment comprising as a part of Priority Axis 1, among other things, subsidy title "Flood Risk Reduction", and, as a part of Priority Axis 6, subsidy title "Optimization of Landscape Water Regime".

Implementation of technical measures is ensured, in particular, through the Programme for Flood Prevention under the responsibility of the Ministry of Agriculture. In this programme, 312 projects were implemented in the period 2002-2005. The Ministry of Agriculture prepared, for the period 2007-2012, the Programme for Flood Prevention II which was approved by the Government of the Czech Republic in November 2006. This programme creates conditions for financial supports within the sub-programmes – flood protection measures with retention, along watercourses, to improve the safety of hydraulic structures, fish ponds rehabilitation, refurbishment, and sludge removal and construction of water reservoirs.

Flood protection measures proposed must be based on high quality information about geomorphology of the area, vegetative cover, soil composition and modern information technologies allowing flood modelling, i.e. information specifying in detail the scope and the course of floods and allowing, at the same time, to assess the efficiency of the selected measures along the whole watercourse

In the period since the year 2000 the relevant bodies succeeded in collecting source materials and designing the technical and cartographic representation of the Map of Inundation Areas of the Czech Republic 1:10 000. They are published and made available for the public in form of Atlases of Inundation Areas. Information of the required quality is successively provided in the process of preparing projects for the Programme of Flood Prevention, in the course of projects evaluating flood events within the programme of the Ministry of the Environment Support of Prevention in Areas Exposed to Threat of Adverse Climate Impacts and from the source documents for river basin district plans. The information, data and maps are available for all users on the web site http://www.vuv.cz/oddeleni-gis/.

As to December 31 2006, water authorities specified inundation areas along 9,883 km, i.e. 63,6 % of the length of all significant watercourses, from the total length of major watercourses administered by Riverboards, state-owned enterprises, amounting to 15,547 km. The new Programme of Flood Prevention II also includes the sub-programme "Determination of Inundation Areas and Study of Rainfall-Runoff Conditions".

Management of measures aimed at protection of people and property in inundation areas requires to improve the quality of the information system used in the course of floods as well as the quality of flood protection plans development

The progress in the field of the forecasting and warning service as well as in the field of preparing, approving and reviewing flood protection plans was in particular affected by adopting new institutions and provisions included in the new Water Act, and methodological guidelines for provision of the forecasting and warning flood protec-

tion service as well as for development of the plan for protection of the area below the respective hydraulic structure against special flood and the technical standards TNV 75 2931 Flood Protection Plans.

In addition, following measures were primarily implemented:

- Automation of precipitation gauge-stations,
- Refurbishment and automation of stream-flow measuring stations in the flood warning profiles,
- Introduction of forecasting hydrological models for all main river basins,
- Increasing the number of forecast river sites from 20 to 100 (the data from 60 of these sites being published to inform the public),
- Introduction of quantified precipitation forecast inputs in models,
- Extension of the lead time of hydrological forecast to two days as a standard,
- Integration of flood warning information in the System of the Integrated Warning Service of the Czech Hydrometeorological Institute,
- Public presentation of information and forecasts on the web site of the forecasting and warning service of the Czech Hydrometeorological Institute,
- Signing of the agreement with the European Centre for Medium-term Weather Forecast in Reding, constituting the basis for providing 10 days weather forecast in the Czech Republic,
- Signing of the agreement with the Institute of Environment and Sustainable Development of the European Union in Ispra constituting the basis allowing the Czech Republic to use the European System of Early Warning which is being tested in the Elbe river basin and the Danube river basin.

Also the river basin administrators' measuring networks equipment in the system of flood warning service was improved. In some cases water management control systems of the river basin administrators use hydrological forecast models for management of hydraulic structures during floods.

In connection with the expansion of information services provided by the Czech Hydrometeorological Institute and the river basin administrators, flood protection authorities ever more rely on these professional institutions and the decentralized system of flood warning service based on the activities of all stakeholders and adapted to local conditions declines. The idea that individual municipalities will successively build up local warning systems is not materialized.

Government Resolution No 604 of May 24, 2006 charged the Minister of the Environment with the task to support operational flood protection management. This task is to be fulfilled in the form of a project with the objective to complete, in the course of the year 2007, the Digital Flood Plan of the Czech Republic and the Flood Information System where one of the key modules is the Digital Flood Book. The outputs of this project will be made available for the use of the regional authorities and municipalities in the capacity of flood protection authorities.

The information provided by the Czech Hydrometeorological Institute on the web site hydro.chmi.cz is used for informing the public on the occurrence of flood situations and on reaching the individual flood activity degrees; further information provided by the river basin administrators is integrated in the portal VODA (www.voda.mze.cz; www.voda.env.cz).

With regard to the character of the territory and the geographic location of the Czech Republic, it is necessary to deal with flood protection in the international context, in particular under the existing interstate agreements on co-operation in trans-boundary river basins

The Czech Republic participates in the international co-operation in flood protection within the international committees for protection of large rivers (the Elbe, the River Odra, The Danube). The activities of the committees resulted in a number of joint documents, the most important ones being the Action Plan of Flood Protection in the Elbe River Basin, the Action Programme for Flood Protection in the Odra River Basin and the Action Programme for Sustainable Flood Protection in the Danube River Basin. These documents include also the deadlines specifying joint reporting on implementation of individual measures.

The European Union adopted in the year 2005 the European Action Programme on flood risk management giving the impulse to prepare a new Directive of the European Union on flood risk evaluation and management. The draft Directive is based on the approach building on flood risk mapping and flood risk management plans. The procedure is linked to activities under Directive No 2000/60/EC and will concern all river basins in Member States with a potential significant risk for the population, the property and the environment, or where such a risk can be reasonably presumed in the future.

The Czech Republic also actively participates in the development of large-scale international projects dealing with flood protection by adopting the methods of ELLA and ODERREGIO land use planning.

With regard to high financial requirements, providing effective flood protection is a process lasting several years where the national interest priority is to support prevention compared to the settlement of costs of damages caused by floods

This principle is implemented by putting into practice the package of prevention programmes and monitored by submitting reports to the Government (the Government acknowledged the first report on fulfilment of flood prevention programmes through its Resolution No 335 of April 7, 2003 and the second report through its Resolution No 383 of April 12, 2006. The performance of the programmes is positively assessed and the recommendation is to continue the implementation of the above mentioned programmes and to provide adequate funds.

Flood protection management must be based on adoption of new legislation

The essential legislative document for flood protection management is the Water Act which deals with measures to prevent and preclude flood damages and specifies flood protection authorities as well as other flood protection stakeholders and their responsibilities. This act is detailed by a number of executive regulations.

The procedure and the responsibility in the course of the rescue work was conceived in new Act No 239/2000, on the Integrated Rescue System and on amendment to certain laws, as amended,

and in Act No 240/2000, on Crisis Management and on amendment to certain laws (the Crisis Act), as amended.

Remedying flood damages and the possibility of their financing was laid down in new Act No 12/2002, on State Aid for rehabilitation of the area hit by natural or other disaster and on amendment of Act No 363/1999, on Insurance and on amendment to certain laws (the Insurance Act), as amended (the Act on State Aid for Rehabilitation of the Area) and in the related Ordinance No 186/2002 stipulating the elements of the report on the preliminary estimate of costs of rehabilitation of property used to safeguard the principal functions in the area hit by natural or other disaster, and the specimen of authorization of the person authorized by the regional authority to ascertain the data required for work on this report, as amended.

The Strategy is a document with a long-term validity open to supplementary proposals responding to the development of knowledge and also to the implementation of measures proposed.

A.2.3. Surface water and groundwater management in their sustainable use

Water management is evaluated on the basis of the outputs of water management balance. Tables No 5, 6 and 7 show the summary of abstractions and discharge of water in the individual sectors of the economy. Pictures No 6, 7 and 8 show the trends in abstractions and discharge of water in the whole Czech Republic.

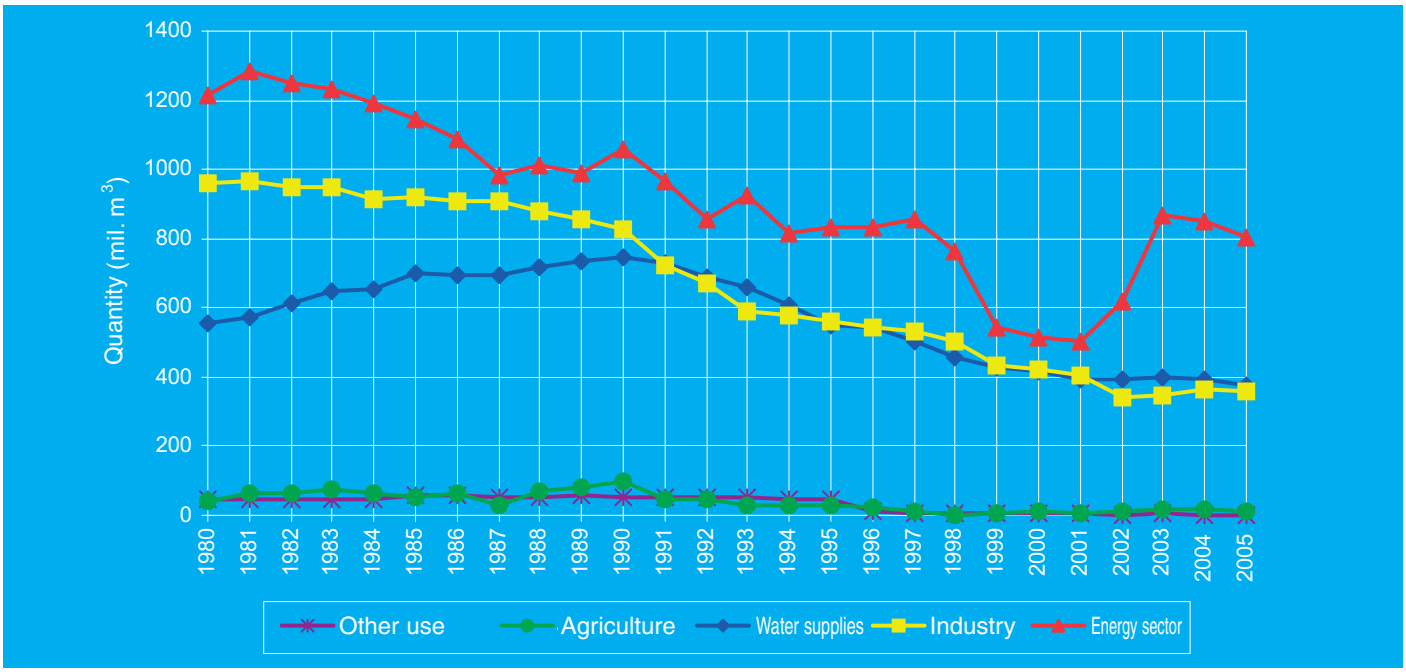
The basic knowledge about a considerable number of groundwater resources and their exploitability is obsolete or, as the case may be, inaccurate. It is based on hydrogeological survey carried out in the period from the sixties to the eighties of the last century, which is obsolete or even erroneous (in particular as regards the assessment of the exploitability of a resource without developing a hydraulic and hydrogeological balance model of the groundwater resource in question).

Table No 5 Summary of surface water abstractions in main river basins in the year 2004

Main river basin	Unit of measure	User category					In total
		Water supply networks	Energy sector	Industry	Agriculture	Other	
The River Elbe	Number	117	21	295	72	32	537
	mil. m³	272.9	744.6	244.3	13.4	1.1	1 276.3
The River Odra	Number	16	1	68	0	25	110
	mil. m³	75.5	4.6	91.5	0	0.4	172.0
The River Morava	Number	36	4	105	27	18	190
	mil. m³	46.8	99.1	25.9	5.4	0.6	177.8
The Czech Republic in total	Number	169	26	468	99	75	837
	mil. m³	395.2	848.3	361.7	18.8	2.1	1 626.1

Source: The preparatory documents of the river basin district plans (2004)

Figure No 6 Development of surface water abstractions by categories of water use



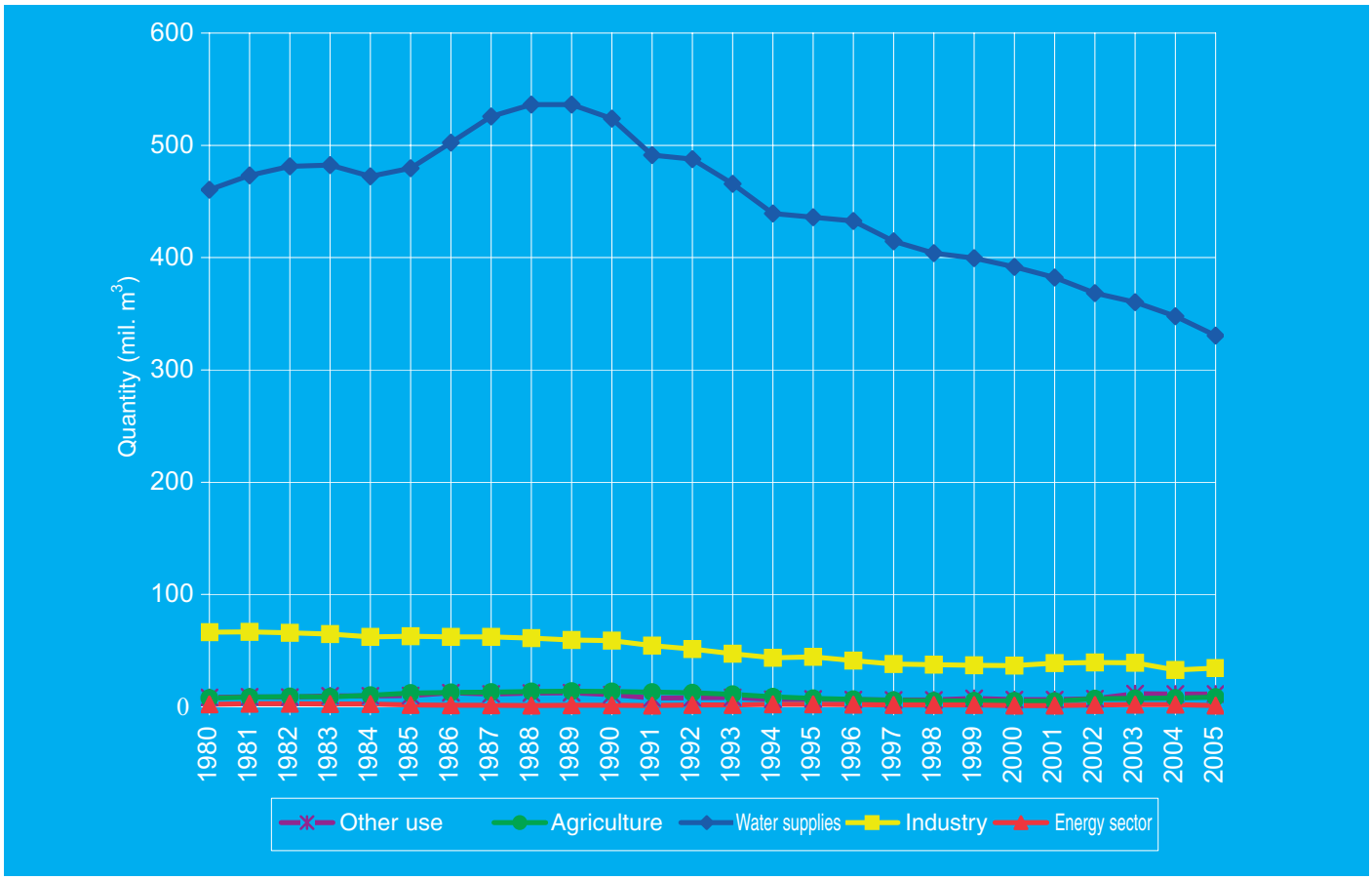
Source: VÚV TGM

Table No. 6 Overview of abstraction of groundwater for the main river basins in the year 2004

Main river basin	Unit of measure	User category					In total
		Water supply networks	Energy sector	Industry	Agriculture	Other	
The River Elbe	Number	1646	9	358	280	70	2 363
	mil. m³	2 06.6	2	22.6	4.5	6.6	242.3
The River Odra	Number	126	0	36	25	30	217
	mil. m³	21.7	0	2	0.4	0.7	24.8
The River Morava	Number	582	0	141	163	78	964
	mil. m³	119.5	0	8.2	2.9	4.2	134.8
The Czech Republic in total	Number	2 354	9	535	468	178	3 544
	mil. m³	347.8	2	32.8	7.8	11.5	401.9

Source: The preparatory documents of the river basin district plans (2004)

Figure No 7 Development of groundwater abstractions by categories of water use



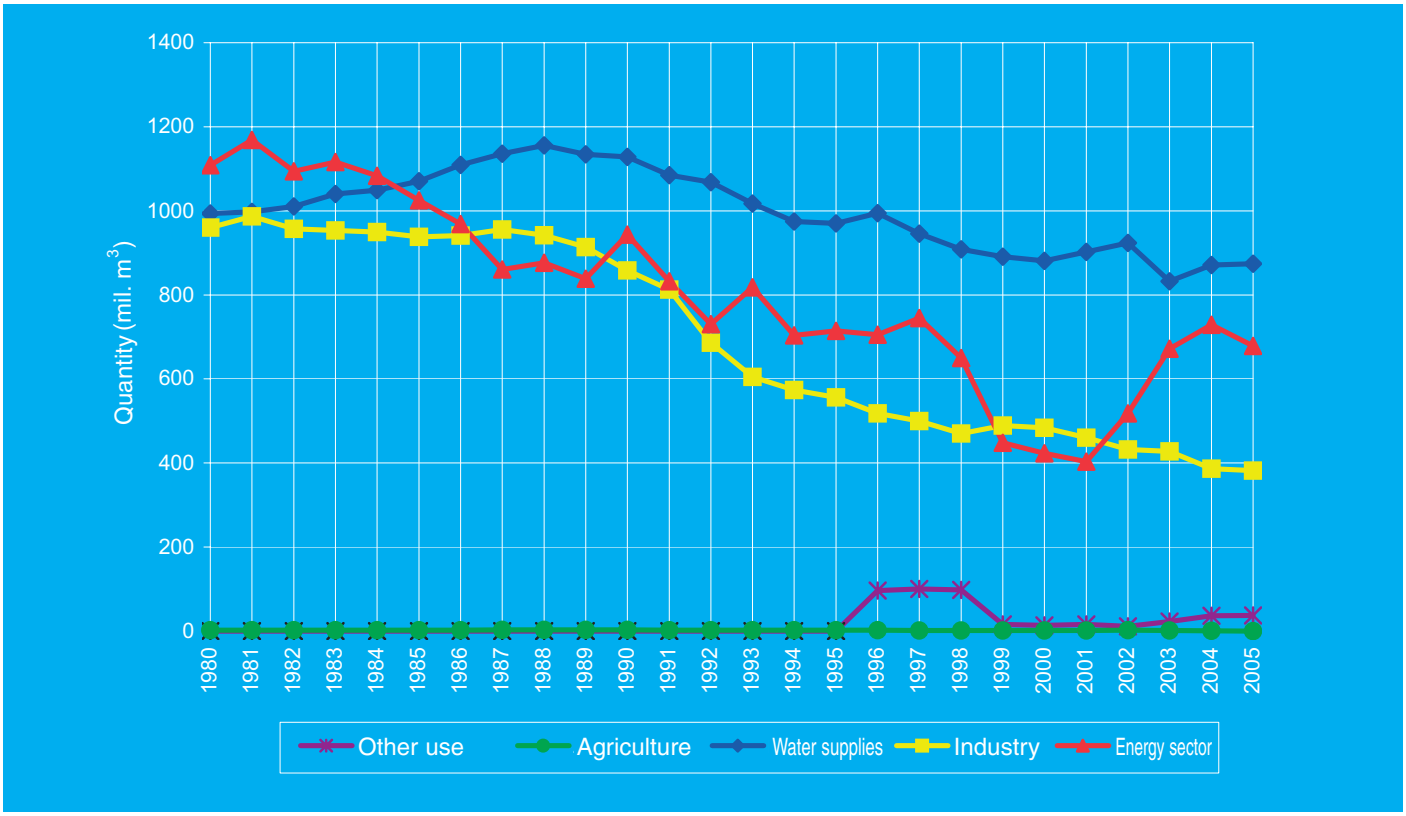
Source: The VÚV TGM

Table No. 7 Summary of wastewater discharge in the main river basin in the year 2004

Main river basin	Unit of measure	User category					In total
		Water supply networks	Energy sector	Industry	Agriculture	Other	
The River Elbe	Number	1 668	47	547	7	106	2 375
	mil. m³	564.9	658.4	305.7	0	6.9	1 535.9
The River Odra	Number	292	1	69	0	83	445
	mil. m³	112.3	1.9	55.7	0	25.8	195.7
The River Morava	Number	718	3	145	2	66	934
	mil. m³	194.3	68.7	25.4	0.1	3.5	292.0
The Czech Republic in total	Number	2 678	51	761	9	255	3 754
	mil. m³	871.5	729	386.8	0.1	36.2	2 023.7

Source: The preparatory documents of the river basin district plans (2004)

Figure No 8 Development of wastewater discharge into surface waters by the water use categories



Source: The VÚV TGM

The rate of water use (as one of the indicators of the assessment of environment in OECD countries) expressed as the ratio of the total water abstractions and water runoff from the respective area amounts in the Czech Republic to approximately 16 – 18 %.

As the Plan of Main River Basins of the Czech Republic lays down, in the field of water management, general objectives for "sustainable use of water resources and water management to meet the requirements for water services, in particular for drinking water supply", the next chapter presents significant initial data for water services in the field of public water supply and sewerage systems.

A.2.4. Water services in the field of public water supply and sewerage systems

Drinking water supply

In the year 2005, public water supply systems supplied drinking water to 9.38 million inhabitants, i.e. 91.6 % of the total number of inhabitants in the Czech Republic. Water losses amounted in that year to approximately 146 million m^3, i.e. 20.9 % of the volume of water to be supplied. The development of the number of inhabitants supplied with drinking water and the specific demand for drinking water billed in the years 1989 and 1997-2005 is presented in graphic form in Figure No 9.

Table No 8 shows the number of inhabitants supplied with drinking water and the specific demand for drinking water in households by individual main river basins in the year 2004:

Wastewater discharge and treatment

In the year 2005, 8.1 million inhabitants, i.e. 79.1 % from the total number of inhabitants in the Czech Republic, lived in buildings connected to public sewerage systems. In total, approximately 546 million m^3 of wastewater were discharged into these sewerage systems in that year. The percentage of treated wastewater amounted to 94.6 % (without rainwater).

Figure No 10 presents in graphic form the development of the number of inhabitants living in buildings connected to public sewerage systems and the volume of discharged and treated wastewater in the year 1989 and in the years 1997-2005.

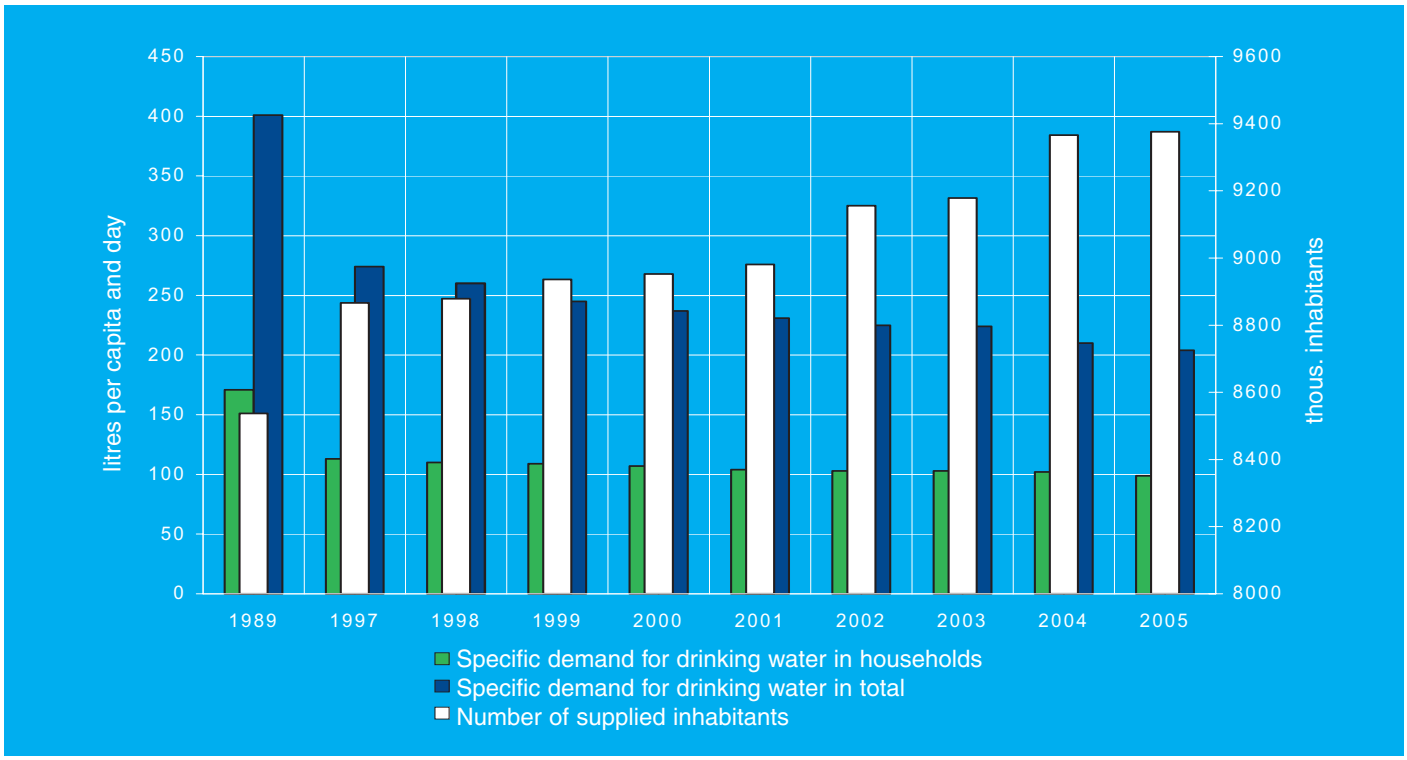
Table No 9 shows the volume of discharged and treated wastewater, and the number of inhabitants living in buildings connected to public sewerage systems by the main river basins.

Table No 8 Drinking water supply in main river basins in the year 2004

Main river basin	*Number of inhabitants supplied with drinking water (in thousands)*	*Specific demand (in l.person^{-1}.day^{-1})*
The River Elbe	5 506	108
The River Odra	1 231	92
The River Morava	2 426	86
The Czech Republic in total	9 163	102

Source: Preparatory documents of the river basin district plans (2004)

Figure No 9 Development of the number of inhabitants supplied with drinking water and the specific demand for drinking water



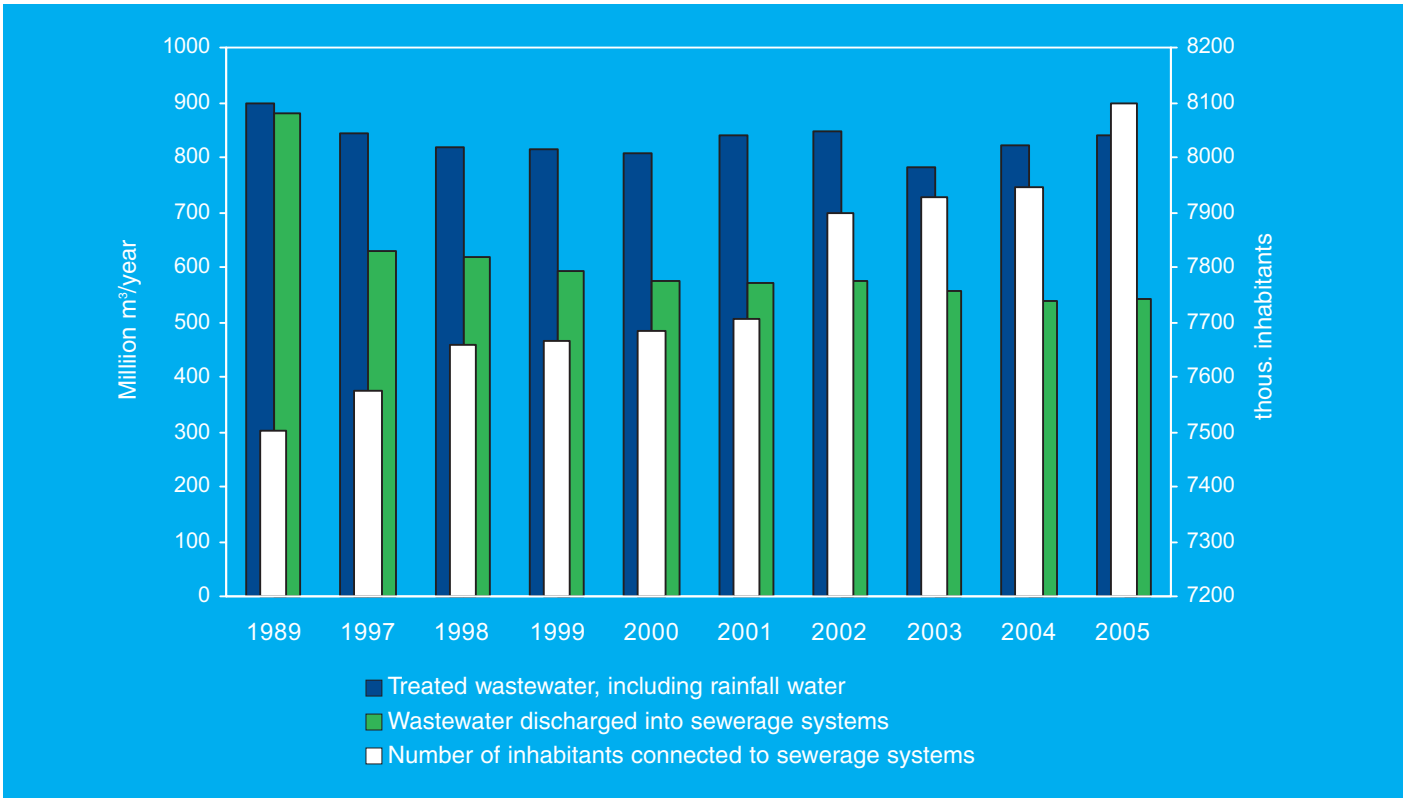
Source: ČSÚ

Table No 9 Sewerage systems and wastewater treatment in main river basins in the year 2004

Main river basin	*Volume of treated wastewater (mil. m³)*	*Number of inhabitants connected to sewerage systems (in thousand)*	*Volume of discharged wastewater (mil. m³)*
The River Elbe	472.5	4 713	305.4
The River Odra	125.8	965	81.3
The River Morava	219.2	2 034	141.7
Czech Republic in total	817.5	7 712	528.4

Source: Preparatory documents for planning in the field of water (2004)

Figure No 10 Development of the number of inhabitants connected the sewerage systems and the volume of the discharged and treated wastewater



Source: The ČSÚ

A.3 SWOT analysis

The analysis of initial conditions for setting general objectives and specification of general measures was carried out as an analysis of their strong points, weaknesses, opportunities and risks with the following conclusions:

The strong points of the current status in the field of water can be primarily seen in:

- Full transposition of the European Communities' legislation into legal regulations of the Czech Republic in the field of water,
- Permanent trend to improve the overall water status,
- Significant reduction of emissions contaminating aquatic environment from point sources of pollution, from sewage and industrial wastewaters,
- Reduction of emissions from non-point sources of pollution by limiting the application of fertilizers and pesticides,
- Decreasing the number of localities with old environmental loads,
- Successive introduction of methods of good practice in the use of chemical substances,
- Good prevention of serious accidents,
- Institutional backup of the serious accident prevention,
- Practical experience gained during the recent extreme floods and its evaluation,
- Sophisticated representative system of protected areas,
- Relatively high forest-cover percentage in the Czech Republic,
- Tradition of soil management in less favourable areas,
- Increasing environmental awareness of the public, well-established regional systems of environmental education and activities increasing awareness,
- Existence of regulatory laws and technical regulations in the field of providing water services,
- Use of the institutes of conceptual planning for the development of water supply and sewerage systems sector,
- Allowing financial supports from the public purse and from the European Union funds to support the development and rehabilitation of water infrastructure,
- Relatively high percentage of inhabitants connected to public water supply and sewerage systems,
- Satisfactory level of wastewater treatment in municipalities with more than 100,000 PE (except for Prague, the Capital of the Czech Republic),
- Satisfactory quality of drinking water from public water supply systems,
- The role of water authorities, river basin administrators, watercourse administrators and the technical and safety supervision of hydraulic structures, specified by the legislation in favour of reliable provision of water services,
- International co-operation in water protection.

The weaknesses of the present status in the field of water must be primarily seen in:

- Different water status in various regions,
- Insufficient standard of wastewater treatment and neutralization at the local level; pollution of watercourses and inappropriate wastewater treatment sludge handling in municipalities with up to 2,000 PE and in municipalities with 2,000-10,000 PE,
- Insufficient level of dealing with the storm water runoff in the urban areas of municipalities,
- Little progress in stocktaking the old environmental loads, or, as the case may be, contaminated places,
- Missing legal regulation dealing with the old environmental loads in a comprehensive manner,
- Insufficient use of the best available technologies (BAT) with regard to water protection
- Reduced natural retention capacity of landscape,
- Increased landscape water erosion,
- Lack of ecostabilizing elements in landscape,
- Little progress in comprehensive land consolidation,
- Status of watercourse morphology,
- Impoverished spatial and age structure and inadequately modified tree species composition of forests,
- Eutrophication and acidification of aquatic environment,
- Anthropogenic soil damage and degradation,
- High ratio of farmland converted into arable land,
- Spreading of invasive plant species at the expense of indigenous riparian vegetation,
- Frequent conversion of land plots adjacent to watercourses,
- Fragmented land ownership,
- Insufficient flood protection of municipalities,
- Urbanization of inundation areas,
- Lack of funds for rehabilitation of long time neglected water supply and sewerage systems infrastructure,
- Lack of funds for rehabilitation of hydraulic structures safeguarding impoundment and storage of surface water on minor watercourses,
- Lack of funds for construction of water supply and sewerage systems, including wastewater treatment plants, to meet the requirements of the relevant legislation of the European Communities, or, as the case may be, of the corresponding national legislation,
- Failure to perform under Article 9 of Directive No 2000/60/EC as regards the settlement of all costs of water services from the revenues from the users,
- Unsatisfactory quality of individual drinking water resources,
- Partly unsatisfactory quality of raw water used for drinking water supply,
- Higher losses of water from public water supply systems compared to the most advanced states of the European Union,
- Reserves in providing water services in emergency and crisis situations,
- Low effectiveness of technological research in the field of public water supply and sewerage systems,
- Reserves in public-relations in the field of providing water services,

- Lack of experience gained in practice in the process of implementing certain provisions of laws in the field of water and providing water services,
- Obsolete or inaccurate basic knowledge of groundwater resources, based on the results of hydrogeological survey carried out in the sixties and seventies.

The opportunity for sustainable development in the field of water can be primarily seen in:

- Implementation of requirements of Directive No 2000/60/EC and the planning process in the field of water,
- Implementation of requirements of Nitrate Directive No 91/676/EEC,
- Utilization of the Operational Programme Environment,
- Utilization of the Programme of Rural Development,
- Provision of funds for implementation of flood protection measures,
- Leap improvement of water status as a result of an increased amount of funds,
- Substantial increase of available public funds and the funds of the European Union for water protection, flood protection and provision of water services,
- Higher level of application of environmentally-sound technologies,
- Introduction of production technologies with more extensive use of recycled water,
- Introduction of the best available technologies (BAT),
- Successive implementation of the "good agricultural and environmental status" and the cross compliance standards,
- Revitalization of minor watercourses,
- Consideration of nature-friendly methods of water retention,
- Implementation of comprehensive land consolidation,
- Strengthening the recreation function of the landscape,
- Acceleration of remediation technologies development,
- Prevention of environmental and technological risks,
- Increasing the public demand for non-production forest, agricultural and aquatic ecosystem functions,
- Increasing the awareness of the need to implement preventive flood protection measures,
- Promotion of regulatory tools in favour of the quality of water services provided,
- Consulting the conceptual documents with the general public.

The risks of failure to safeguard sustainable development in the field of water, unless sufficient measures are implemented, must be primarily seen in:

- Uncertainties regarding the possibilities to draw, on a continuous basis, the expected volume of financial support from the EC Cohesion Fund to meet the Czech Republic's obligation to build and refurbish sewerage systems and wastewater treatment plants in the transition period until 2010, as required by the EU Directive on municipal wastewater treatment, as a result of reservations of the European Commission about contracts for operation of water supply systems, sewerage systems and wastewater treatment plants,
- Lack of own funds to finance the projects,
- Reduction of the anticipated public supports allowing to prepare and implement the necessary measures primarily in the field of water management infrastructure,
- Lack of funds allowing to settle expenses for measures in the public interest (Section 102 of the Water Act),
- Insufficient material and professional background for prevention of serious accidents,
- Possibility of a terrorist attack on drinking water source,
- Failure to meet the limits of environmental pollution, lacking the possibility to fund the introduction of the best available techniques (BAT),
- Uncertainties in the definition of good water status standards,
- Deterioration of air quality and thus increase of atmospheric depositions,
- Increase of anthropogenic load on the environment in connection with economic development,
- Slowing down the changeover in manufacturing companies to progressive technologies,
- Exposure of water resources as well as water supply and sewerage systems to threat in emergency and crisis situations (including floods and dry periods),
- Occurrence of the pessimistic course of the expected climate change.

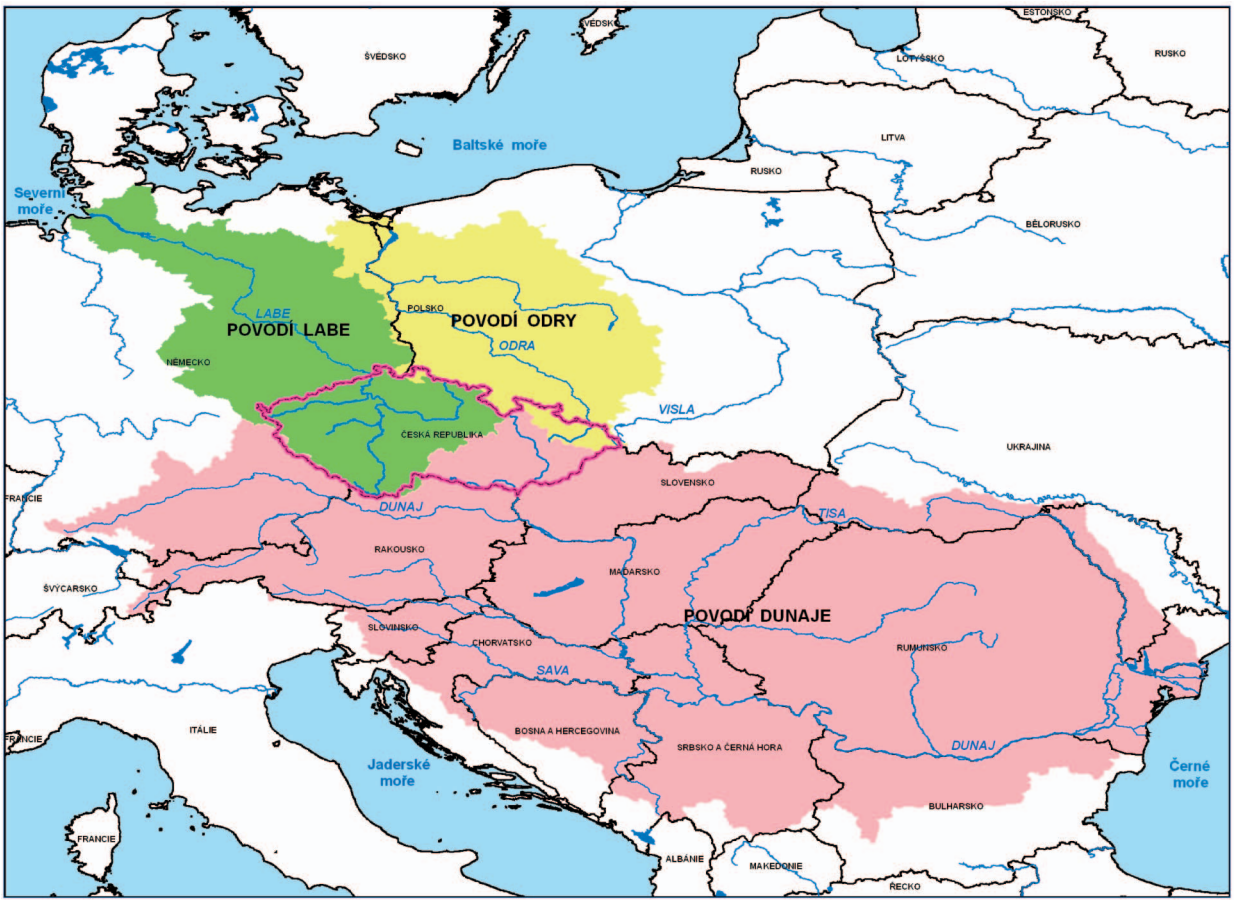
B. DEFINITION OF THE MAIN RIVER BASINS' RELATION TO THE TERRITORIES OF REGIONS AND TO THE INTERNATIONAL BASINS OF THE RIVER ELBE, THE RIVER ODRA AND THE RIVER DANUBE

The Water Act defined three main river basins – the Elbe River basin (drainage area of the North Sea), the Odra River basin (drainage area of the Baltic Sea) and the Morava River basin including other river basins of the tributaries of the Danube (drainage area of the Black Sea). These main river basins constitute at the same time the national parts of the international basins of the River Elbe, the River Odra and the River Danube. The following table shows the respective portion of the national parts area of the river basins to the above mentioned international river basins, and the following map presents their location in diagrammatic form:

Table No 10 Relation of main river basins of the Czech Republic to international river basins

Main river basin (national part of the international basin)	*International basin*	*Proportion of the national part to the international basin area (%)*	*Proportion of the national part to the area of the Czech Republic (%)*
The River Elbe	The River Elbe	33.7	63.3
The River Odra	The River Odra	5.9	9.2
The River Morava	The River Danube	2.9	27.5

Figure No 11 International basins of the River Elbe, the River Odra and the River Danube



Relation to the territories of regions

The main basin of the River Elbe includes the whole territories of the following regions: Prague, the capital of the Czech Republic, Středočeský kraj and Karlovarský kraj regions, ceirtain parts of Ústecký kraj Region (98 %), Královéhradecký kraj region (95.7 %), Jihočeský kraj region (94.4 %), Plzeňský kraj region (93.9 %), Liberecký kraj (77.7 %), Pardubický kraj region (73.1 %), and Kraj Vysočina region (42.9 %).
The main basin of the River Odra includes parts of the territories of the following regions: Moravskoslezský kraj region (95.1 %), Liberecký kraj region (22.3 %), Olomoucký kraj region (18.7 %), Královéhradecký kraj region (4.3 %) a Ústecký kraj region (2 %).
The main basin of the River Morava includes the whole territories of the following regions: Jihomoravský kraj Region, Zlínský kraj Region, and also parts of the territories of the following regions: Olomoucký kraj region (81.3 %), Kraj Vysočina region (57.1 %), Pardubický kraj region (26.9 %), Plzeňský kraj region(6.1 %), Jihočeský kraj region (5.6 %) a Moravskoslezský kraj region (4.9 %).

Relation to NUTS II territorial units

The main basin of the River Elbe includes the whole NUTS II territorial units: Prague, the capital of the Czech Republic, Central Bohemia as well as the parts South West (93.3 %), North West (98.8 %), North East (82.9 %) and South East (21.2 %).
The main basin of the River Odra includes the whole NUTS II territorial units: Moravia-Silesia (95.1 %), Central Moravia (10.4 %), North East (7.3 %) a North West (1.2 %).
The main basin of the River Morava includes the whole NUTS II territorial units: Central Moravia
(10.4 %), South East (78.8 %), North East (9.8 %), South West (6.1 %) and Moravia-Silesia (4.9 %).

Relation to the river basin districts

The main basin of the River Elbe includes the Upper and and Middle Elbe River basin districts, the Upper Vltava River basin district, the Berounka River basin district , the Lower Vltava River basin district, the Ohře River basin district and the Lower Elbe (without the boundary river basins comprising parts of the Danube River basin and the Odra River basin).
The main basin of the River Odra includes the Odra River basin district and certain parts of the Upper and Middle Elbe River basin districts as well as the Ohře River basin district and the Upper Elbe River basin district.
The main basin of the River Morava includes the Morava River basin district, the Dyje (Thaya) River basin district and certain parts of the Upper Vltava River basin district, the Berounka River basin district and the Odra River basin district.

Relation to the territorial competence of river basin administrators

The main basin of the River Elbe is in the territorial competence of the Povodí Labe (the Elbe Riverboard) state-owned company, the Povodí Vltavy (the Vltava Riverboard) state-owned company and the Povodí Ohře (the Ohře Riverboard) state-owned company.
The main basin of the River Odra is in the territorial competence of the Povodí Odry (the Odra Riverboard), state-owned company, the Povodí Labe (the Elbe Riverboard) state-owned company and the Povodí Ohře (the Ohře Riverboard) state-owned company.
The main basin of the River Morava is in the territorial competence of the Povodí Moravy, s. p. (the Morava Riverboard, state-owned company) and the Povodí Vltavy (the Vltava Riverboard) state-owned company.

Figure No 12 Relation of main river basins to territories of regions

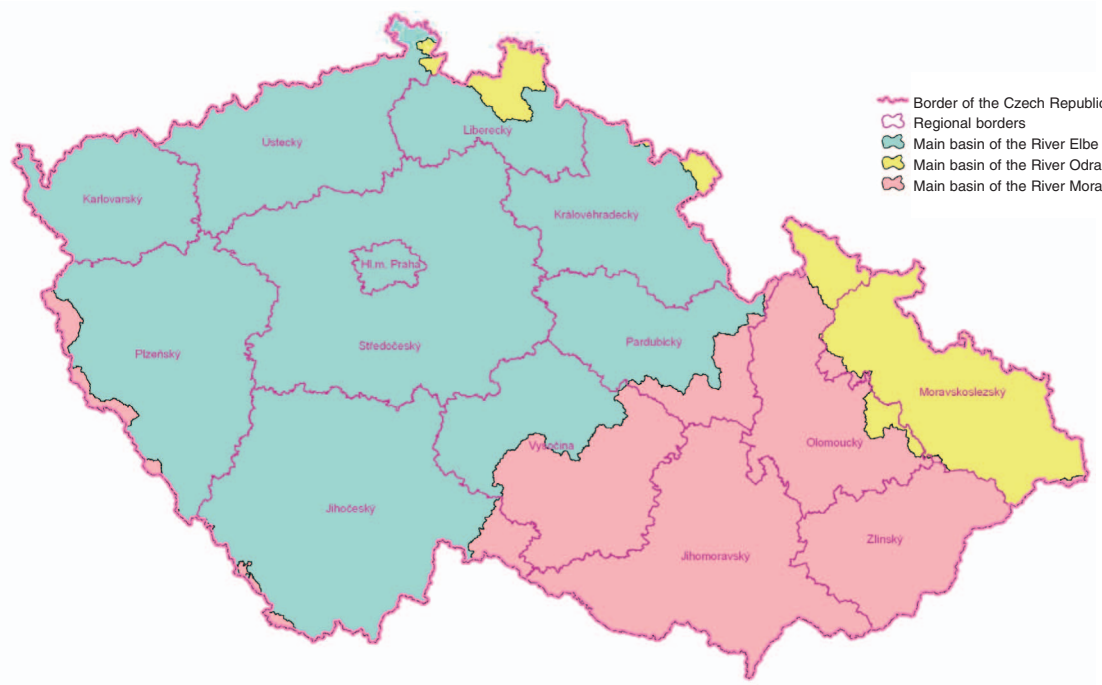


Figure No 13 Relation of main river basins to NUTS II territorial units

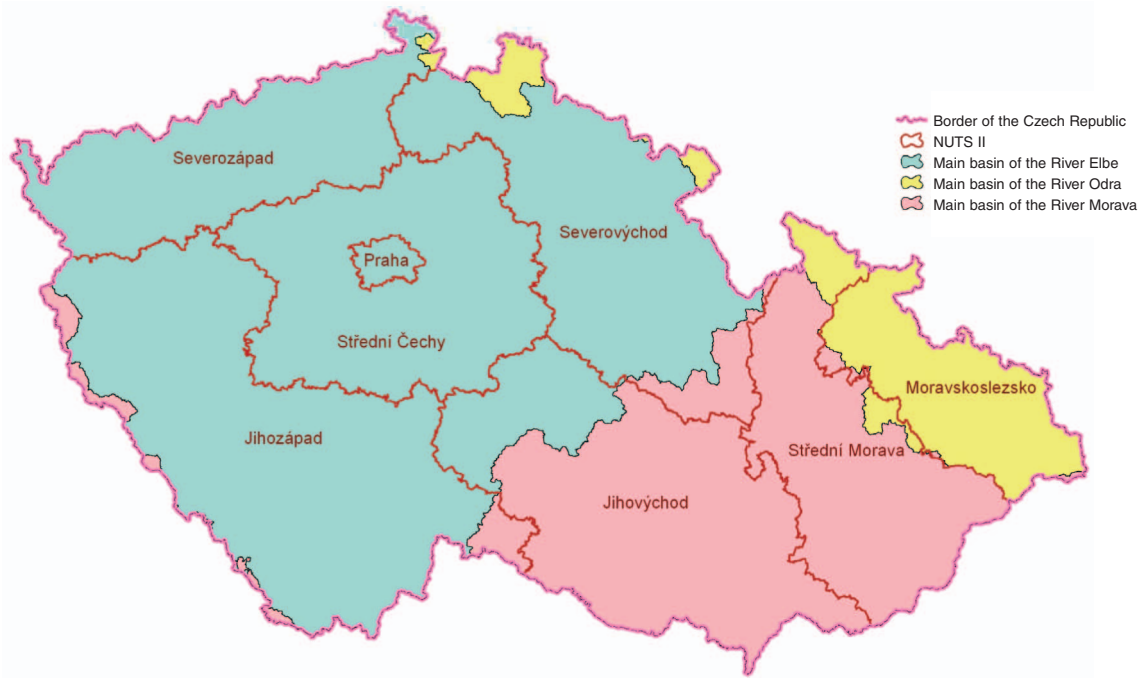


Figure No 14 Relation of main river basins to river basin districts

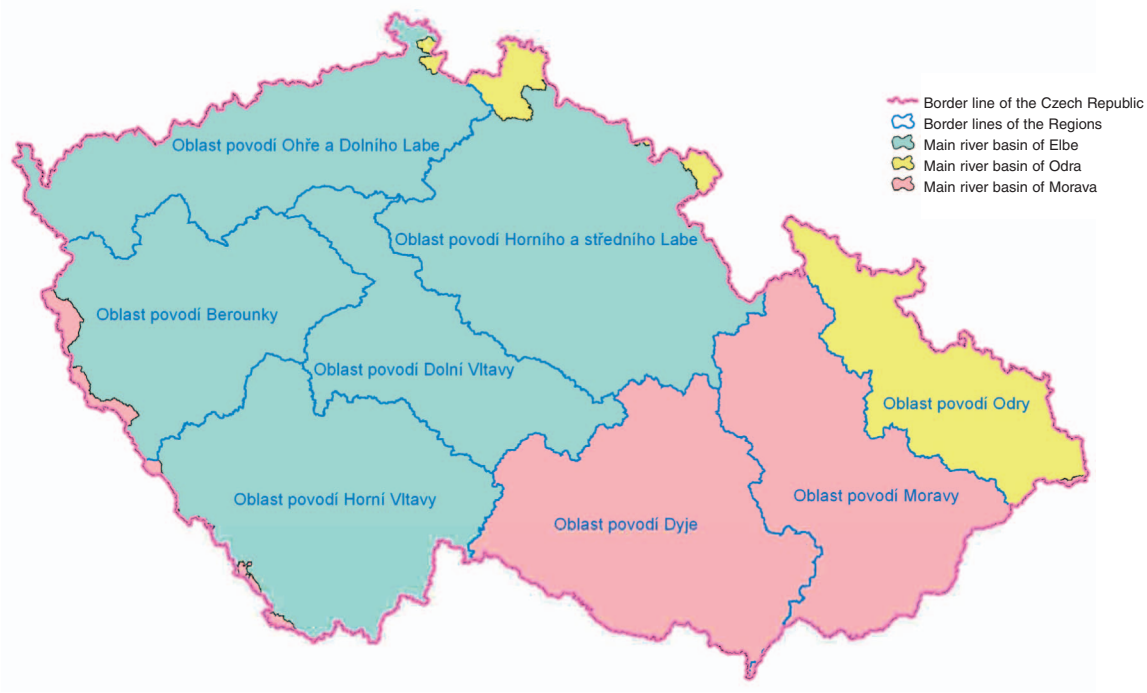
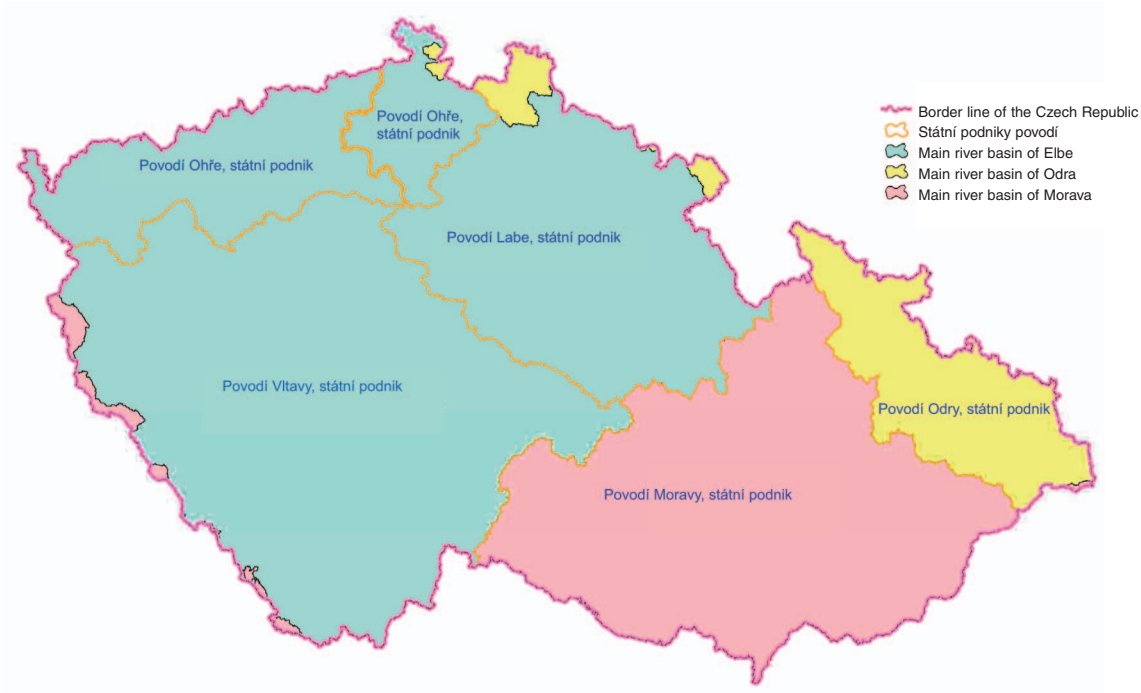


Figure No 15 Relation of main river basins to the territorial competence of river basin administrators



C. MAIN PRINCIPLES AND RULES OF NATIONAL POLICY FOR SAFEGUARDING PUBLIC INTERESTS IN THE LONG-TERM PERSPECTIVE

In compliance with the Water Act, the general objectives, main principles and rules of the national policy for safeguarding in the long-term public interests in the following structure:

- Protection of water as a component of the environment,
- Flood protection and protection against other detrimental effects of water,
- Meeting the requirements for water services.

Even though this structure is designed for description of the objectives, principles and rules of the policy in the field of water, as a system it is construed as an integral whole interconnected by interdependent links based on the principle of integrated protection and exploitation of water resources. Accordingly, all of the objectives defined for individual scopes and the subsequent measures must be evaluated in parallel and, for final decision on their implementation, proposed and assessed in alternatives including the assessment of their impacts on the landscape, the population and the economy to maximize economic and social benefit, justly and with no adverse impact on sustainability of the basic ecosystems.

C.1. Protection of water as a component of the environment

The main principle and rule is to safeguard water protection in compliance with the requirements of the national legal regulations reflecting the relevant regulations of the European Union focused on protection and improvement of the status of surface waters and groundwaters, as well as aquatic ecosystems through integrated protection of the quantity and quality of both surface waters and groundwaters implemented in hydrological units and hydrological zones with a feedback to the status of the specified surface water and groundwater bodies. This is based on the assumption that the improvement of the protection and the status of water as a component of the environment is a prerequisite for increasing the attractiveness and competitiveness of the state and its regions while using innovative effects of the environmental policy for sustainable development.

The trends in water protection as a part of the European process are summarized in Directive No 2000/60/EC stipulating for the member states unifying rules for protection and use of surface water and groundwater through successive steps in regular cycles up till the year 2027.

To improve the protection and status of water as a component of the environment is a prerequisite for increasing biodiversity and ecological stability of landscape. Only ecologically stable landscape can resist the adverse external impacts such as, among other things, climate changes.

C.2. Flood protection and other detrimental effects of water

As regards the comprehensive approach to planning in the field of water, it is necessary to deal also with the impacts of extreme hydrological phenomena that are, in the Czech Republic, construed as the occurrence of extreme floods on the one hand, and, on the other hand, of extreme water scarcity periods as a result of extreme drought. These natural phenomena are, under the conditions of our country, the most serious natural disasters exposing to threat both the lives of the inhabitants and their property, and causing problems for national economy. The anticipated climate change, for which several scenarios were developed regarding the impacts on the hydrological conditions, may in the Czech Republic result in an increased occurrence of minimum flows and flood discharges. These changes will not show themselves in a leap but gradually. Also the current inappropriate methods of landscape use and landscape management contribute to the increase of flow extremes.

Another detrimental effect of water, caused primarily by human activities, is the excessive water erosion.

Basic approach to dealing with flood protection and protection against other detrimental effects of water must be based on respect to the natural character of these extreme phenomena and on the need to mitigate their impacts.

Flood issues (flood protection of residential areas, communications and other structures), water erosion issues (reducing degradation of soil cover) and the issues of managing water scarcity (occurrence of drought) must be dealt with by partly different procedures and measures, and the objectives and programmes of measures must be defined separately for each of these public interests. It is necessary to prefer such measures that are of multipurpose nature and help to increase the retention capacity of landscape, to stabilize landscape water regime and to reduce excessive water erosion, and that can be implemented both in flood protection and in mitigating the impacts of other detrimental effects of water.

C.2.1. Flood protection

Strategy of flood protection in the Czech Republic adopted by the Resolution of the Government of the Czech Republic No 382 of April 19, 2000 responding to the comprehensive assessment of the flood disaster in the years 1997 and 1998, has become matter-of-factly a political document which took into account the existing legislative, organizational, technical and economic aspects, defined the main principles in flood protection, emphasized the need of systemic flood prevention and created a framework for defining concrete flood prevention programmes.

Other flood events in the major part of the Vltava River basin, on the Lower Elbe and in one part of the Dyje (Thaya) River basin in the

year 2002, and spring floods in the year 2006 on almost the whole territory of the Czech Republic showed that it is necessary to further improve both the operational systems activated in the course of an ongoing flood, especially when rescuing population and property, and the systems of safeguarding preventive measures. This was the reason for producing the analysis of performance of the Strategy of Flood Protection in the Czech Republic (included in Appendix No 1) and the conclusions and recommendations of the analysis are implemented in this document.

The point of departure of the flood protection strategy is respecting the following knowledge:

- Floods are a natural phenomenon which cannot be prevented,
- Irregular occurrence of floods results in underestimation of flood hazard,
- Areas with flood occurrence do not depend on administrative borders,
- Floods are a part of natural processes and, for river ecosystems and ecosystems associated with water, constitute an important factor of their natural development,
- Interventions in natural processes, in particular changes in utilization of land in the river basin area and flood plain areas, significantly affect the rainfall-runoff conditions and bring about the risks of runoff acceleration and increase,
- Ongoing and expected climate changes substantiate worries that the frequency of occurrence as well as the intensity of extreme hydrological phenomena, i.e. of both the floods and the dry periods, may increase,
- Absolute level of flood protection is impossible; there is always risk of a larger flood than the design flood, a risk of the occurrence of phenomena that can reduce the functionality of the elements of protective systems.

The flood protection system in the Czech Republic and the main tasks of the individual entities participating in flood protection are stipulated by the Water Act. Further development of the system is based on the current status, on the knowledge gained from the evaluation of floods in the years 1997-2006, on the measures adopted at the national level, and also on the documents adopted in the process of co-operation of the countries in the international basins of the River Elbe, the River Odra and the River Danube. The main principle is interlinked and well-balanced performance of flood protection in three stages:

a) In the flood hazard period, efficient system of flood forecasting and warning service, and in the course of flood, effective management of flood protection,
b) After the flood, prompt remedy of flood damages and rehabilitation of the relevant functions of the affected areas with regard to reducing the possibility of the occurrence of new damage during future floods,
c) In the period between floods, prevention of possible risks by implementing preventive measures and careful preparation for activities in the course of flood hazard and during flood.

C.2.2. Protection against other detrimental effects of water

In this field, the priority issues are adverse impacts of drought and excessive water erosion.

The issue of drought

Drought is a standard, ordinary and recurrent climate phenomenon; it is a temporary deviation within natural variability. To satisfy the needs of the society when this phenomenon occurs, water supply systems using natural and artificial water reserves were designed.

The expected climate change (on May 22, 2006 the European Commission announced a campaign drawing attention to the issue of climate changes) will bring about, among other things, more frequent occurrence of extreme water scarcity periods as a result of long-lasting extreme drought. This change, however, has a character of a long-term climatic phenomenon that the existing systems may not cope with and that may, in addition, lead to a change in the demand for water with the simultaneous reduction of water supplies. The National Climate Programme provided the framework for development of climate change scenarios and estimates of the impacts on agriculture, human health as well as on water resources management and forestry in the Czech Republic. Government Resolution No 187 of March 3, 2004 approved the National Programme for Mitigation of Climate Change Impact in the Czech Republic, which, among other things, accentuates the necessity to prepare and introduce suitable adaptation measures in the relevant sectors, including the water management sector.

The anticipated changes in runoff conditions and hydrological balance will not occur at once and will not repeat every year. However, there is an increasing probability of the occurrence of sub-normal periods lasting several years, resulting in necessary and sudden radical changes in water management. The real future runoff development is uncertain and therefore the adaptation measures, in the sense of modifying the existing water management status, must start as soon as possible and be gradually adjusted according to the change of natural conditions and hydrological balance to minimize sudden adverse impacts of water management on the economy as well as on the quality of life of the population.

Implementation of adaptation strategies will make sense even disregarding the link to the climate change. The current climate variability, including the extreme weather phenomena, usually causes significant damages. Major effort to adapt to these phenomena may, with regard to adoption of the precaution principle, reduce the scope of these damages in a short-term perspective disregarding climate changes from the long-term point of view.

A suitable adaptation can minimize the risks of the relevant sectors' vulnerability as well as minimize the costs resulting from the adverse impact of climate change, and, on the contrary, maximize the positive benefits of this change. Catchment areas with storage space in the form of groundwater supplies or natural surface water accumulation and catchment areas with a favourable landscape structure are more resistant to climate change impacts.

The issue of water erosion

At present the natural water erosion rate is exceeded as a result of a high proportion of land conversion to arable land and land consolidation under the morphological conditions of the Czech Republic, and also as a result of the inappropriate system of farming on that land. More than 50 % of arable land and 5 – 10 % of forest land is exposed to the threat of excessive water erosion. The most severe threat concerns agricultural areas in Moravia in the main basin of the River Morava and forestland on flysch bedrock of the Moravskoslezské Beskydy Mountains in the main basin of the River Odra. Apart from damage to production capacity of soils and the adverse impact on water quality, the biggest problem can be seen in silting of watercourses and reservoirs with suspended load and sediments.

To accomplish protection against excessive water erosion of land surface, solutions of organizational, agri-technical and technical nature must be interconnected and complementing each other. Their combination allows to respect the requirements of agricultural production as well as to provide the necessary protection of land. The measures to reduce excessive soil erosion constitute one of the complementary and subsequently conditional steps to remedy, rectify and subsequently compensate hydrological regime in landscape used for farming. Revitalization effect of erosion measures is beneficial whenever these measures help to increase the retention of water in landscape, or, as the case may be, if the series of concentrated runoff and impoundment of water are interrupted. The erosion measures must meet the requirement for sufficient effectiveness together with a positive effect on hydrological regime of the area and the aesthetic and ecological incidence in landscape.

This will be supported by land-use planning where one of the permanent objectives is to protect the landscape as an important component of the environment for lives of the inhabitants and to specify, with regard to that, land use conditions and protection of undeveloped land and undevelopable land plots. The land-use planning tasks include also the task "to create conditions in the respective area for reducing the threat of environmental and natural disasters and for remedying their impacts in a nature-friendly manner" under Section 19 of Act No 183/2006 on Land Use Planning, and Building Code (the Building Act).

C.3. Meeting of the requirements for water services

Under Article 2, sub-section 38 of Directive No 2000/60/EC, water services are considered to include all activities providing to households, public institutions or any economic activity:

a) Abstraction, impounding, storage, intake, treatment and distribution of surface water or groundwater,
b) Wastewater discharge with subsequent disposal into surface water.

In accordance with the preparatory work on the river basin district plans, providers of water services are in the Czech Republic constituted by:

– Owners or, as the case may be, operators of public water supply and sewerage systems (by course of Act No 274/2001 on Public Water Supply and Sewerage Systems and on amendment to certain laws, as amended – hereinafter referred to as the "Water Supply and Sewerage Systems Act"),
– River basin administrators and watercourse administrators (by the course of the Water Act).

The users of water services include a wide spectrum of water consumers who pay for the services provided. Financial flows among the providers and the users of water services are based on provisions of the Water Act and the Supply and Sewerage Systems Act. Owners and operators of public water supply and sewerage systems provide, in the sector of drinking water supply, wastewater discharge and treatment in the public interest in a natural monopoly environment. Long-term safeguarding of public interests is substantiated primarily by the following needs of:

– Social and living standards and high-quality life and health of the population,
– Economic and urban development,
– Healthy environment,
– Economic development in industry and other sectors,
– Dealing with potential crisis situations.

River basin administrators as well as watercourse administrators provide water services in the public interest also in a natural monopoly environment. Long-term safeguarding of public interests is substantiated primarily by the following needs of:

– Conservation of the environment or, as the case may be, the natural watercourse environment,
– Conservation of the status of surface waters and groundwaters,
– Creating conditions allowing authorized water use by the course of Chapter II of the Water Act (water abstractions, impoundment, storage and intake of water etc.),
– Co-operation in remedying accidents on watercourses,
– Safeguarding the conditions for administration and operation of watercourses and hydraulic structures.

To protect public interests and with regard to the character of the above mentioned water services provided in a natural monopoly environment, the state will continue to use the regulatory tools based on the following relevant legal regulations, see Table No 11. In safeguarding water services attention must be paid also to other water uses that do not require permission for water use, in particular water use for navigation.

Table No. 11 Regulatory tools for water services

Law	*Main scopes of the subject of regulation*	*Responsibility for regulation*
The Supply and Sewerage Systems Act	Quality, reliability and conditions for providing water services in the field of water supply and sewerage systems	Municipalities, state administration
	Quality of raw water for drinking water treatment	State administration
	Rehabilitation and development of public water supply and sewerage systems	Municipalities, owners of infrastructure, state administration
	Concept of water supply and sewerage systems	Regional authorities, state administration
	Licence for operation	State administration
	Water and sewerage charges	State administration
The Act on Prices	Price of water and sewerage charges	State administration, to a certain extent municipalities
	Price of surface water abstraction	State administration
The Act on Protection of Public Health	Drinking water quality Bathing water quality	State administration
The Act on Protection of Economic Competition	Protection of market environment for water services	State administration
The Water Act	Conditions for surfade water and groundwater abstractions and wastewater discharge	State administration
	Charges for the volume of used water and for wastewater discharge	State administration
	Conditions for administration of water courses and hydraulic structures	State administration
	Conditions for impoundment and storage of water	State administration
	Permitting constructions of hydraulic structures	State administration
	Concepts and programmes of measures in river basin districts	State administration, regional authorities
The Act on Nature Conservation and Landscape Protection	Conditions for protection of the environment of watercourses and hydraulic structures associated with watercourses	State administration

Focal point of the role of state is to provide high-quality institutional coverage, high-quality legislation and support the required trends of water services development. The general principle is an active policy aimed at supporting water services development, and also implementation of legal regulatory instruments including possible penalties for failing to perform statutory duties.

D. PROGRAMMES OF MEASURES AND TIME SCHEDULES TO ACHIEVE GENERAL OBJECTIVES AND RULES AND PRINCIPLES DEFINED FOR THE TERRITORY OF THE CZECH REPUBLIC, OR FOR INDIVIDUAL MAIN RIVER BASINS

Programmes of measures to achieve the general objectives as well as the defined rules and principles are also structured into areas of public interests:

- Protection of water as a component of the environment,
- Flood protection and protection against other detrimental effects of water,
- Meeting of the requirements for water services.

In compliance with Appendix 1 to Ordinance No 142/2005 on planning in the field of water, the programmes of measures are in each area of public interests divided into:

- Proposed economic tools and measures,
- Key measures complementing water management infrastructure,
- Proposed changes to legislation and proposals for additions to technical regulations,
- Good practice propositions,
- Measures to support economical use of water resources and technologies not causing stress on aquatic environment,
- Suggestions for R&D focus and promotion of international co-operation,
- Information tools for communication with the public and educational and demonstration draft projects.

These types of measures must complement each other to meet the set objectives. In cases when the objective can be met by implementing alternatives of the measure in question, it is necessary to assess in a well-balanced manner the impacts of individual alternatives and their combinations on basic ecosystems, inhabitants, economic demand (including claims for compensations), and to select a suitable sustainable alternative of the respective measure or a combination of alternatives.

In the period when this Plan of Main River Basins of the Czech Republic is in force, no change is expected regarding the validity of the existing economic tools as specified in Sections 88, 89, 100 and 101 of the Water Act and Section 20 of the Water Supply and Sewerage Systems Act.

Implementation of programmes of measures according to river basin disctrict plans will require securing adequate funds for the regional authorities, tied to co-financing or, as the case may be, to the implementation of the approved measures.

This chapter also deals with the required "Time schedule for Implementation of Measures" under Appendix No 1 to Ordinance No 142/2005 on planning in the field of water. Deadlines for implementation of individual measures were scheduled in a manner safeguarding their execution in four main stages:

- By the year 2010 at the latest
- By the year 2012,
- By the year 2015,
- Long-term perspective.

Unless a programme of measures is time limited as above, it is assumed that it will be implemented and monitored on a continuous basis and that the task in question is consequently a standing or permanent one.

D.1. General programmes of measures to meet the objectives of water protection as a component of the environment

To meet the general objectives in the field of protection of water as a component of the environment, the Plan of Main River Basins of the Czech Republic lays down for the period until the year 2012 the following priorities of the programmes of measures:

- To reduce pollutant emissions from point sources of pollution to the level specified by the requirements of the national legal regulations,
- To meet the requirements for municipal wastewater treatment resulting from the Accession Treaties concluded with the European Community till December 31, 2010,
- To reduce pollution from non-point and diffuse sources of pollution, to remove old environmental loads and old dumps significantly affecting water status,
- To meet the required immissions standards in watercourses,
- To verify the level and potential improvement of area protection of water resources, especially in natural water storage areas,
- To intensify the effort to safeguard the yield, quality and health safety of water resources,
- To achieve sustainable and well-balanced use of water resources,
- To increase the protection of ecological stability of landscape,
- To revitalize water biotopes and biotopes associated with water,
- To create conditions for environmentally oriented management of watercourses and their flood plains.

D.1.1. Proposed tools and measures

- To adjust the system of charges for wastewater discharge into surface waters with regard to their quality or quantity, taking into account the matter-of-fact priorities of water protection in the Czech Republic in the sense of increasing the pressure on reduction of nutrients discharge into surface waters, bacterial pollution, specific organic substances pollution and heavy metals pollution. To use, to this end, indexation of charges, adjustements of limits for imposition of fees and charges as well as the updating of taxed pollution indicators etc.

- To secure the funds to meet the objectives in the field of investments complementing water infrastructure, it will be necessary, as long as this Plan of Main River Basin of the Czech Republic is in force, to use subsidies from public budgets and thus strengthen the active policy of the state to promote implementation of the required projects with the investors. To use, to this end, national programmes for financial support, European Union funds within the Operational Programme Environment as well as the means of the European Agricultural Fund for Rural Development.
- To reinforce the existing economic tools supporting measures in the programmes for optimizing landscape water regime and reducing adverse impacts of farming, forestry and fishery management on water as a component of the environment and aquatic ecosystems.
- To use subsidy titles included in the Programme of Rural Development of the Czech Republic, for instance measures derived from the process of carrying out land consolidation, sustainable use of farmland and forest land (especially grassing land along watercourses, afforestation, reduction of adverse impacts of water erosion etc.), measures to meet the requirements for management in vulnerable areas, environmentally sensitive management methods as well as the measures derived from construction of minor water structures in municipalities with up to 2,000 PE (sewerage systems and wastewater treatment plants).
- To use subsidy titles included in the Operational Programme Environment, priority axis 6, to optimize landscape water regime.
- To maintain, as national subsidy titles, the landscape-forming programmes of the Ministry of the Environment (the Programme of Revitalization of River Systems and the Programme for Landscape Conservation) constituting important complementary tools in addition to the Operational Programme Environment aimed at rehabilitation of stability of landscape water regime.
- To maintain, as national subsidy title, the programme of the Ministry of Agriculture aimed at supporting construction and rehabilitation of sewerage systems and wastewater treatment plants, constituting an important complementary tool in addition to the Operational Programme Environment aimed at improving the quality of discharged wastewaters and improvement of drinking water supply.
- In connection with the existing legal regulations, to deal with the support of farming entities in a manner increasing their motivation in the direction of water protection and soil conservation.

D.1.2. Measures complementing water management infrastructure

- Until the end of the year 2010, to provide for construction of the missing municipal wastewater treatment plants and sewerage systems, rehabilitation of wastewater treatment plants and improvement of the wastewater treatment technologies in conurbations with more than 2,000 PE. This measure comprises completion of sewerage systems and construction of new ones or, as the case may be, rehabilitation or intensification of the existing wastewater treatment plants in conurbations included in the updated Specific List of Conurbations in the Czech Republic, specified into various interim categories of transitional periods considered by the Government in the framework the Updated Strategy for Funding the Implementation of Council Directive No 91/271/EEC" on municipal waste water treatment. It is assumed that technologically advanced and economical approaches to concrete projects will be used.
- To provide for adequate wastewater treatment in municipalities with up to 2,000 PE and furnished with an approved and well-functioning public sewerage system, and also where it is reasonable in terms of water protection or with regard to other environmental protection interests. In compliance with the requirements of Directive No 2000/60/EC it is necessary, as a priority matter, to deal with the requirements for safeguarding the quality of water resources and for protection of water and ecosystems in protected areas associated with water.
- To accelerate the rehabilitation of sewerage systems which are obsolete and susceptible to failure and thus to reduce the risk of uncontrolled groundwater contamination due to the leakage of discharged waste waters. To identify, in the plans for water supply and sewerage systems development, the need of rehabilitation of sewerage systems which are obsolete and susceptible to failure and thus to reduce the risk of uncontrolled groundwater contamination due to the leakage of discharged waste waters. Following an agreement between the parties developing river basin district plans and the infrastructure owners, to draw up time schedules for preparation and successive implementation of relevant measures. To assume, to this end, the framework of financial support resources specified under part E, in particular the funds of the Operational Programme Environment. To base the project selection especially on cost-benefit analysis of the plans of the projects adopted for financing with the support from the Operational Programme Environment and also using the Water Supply and Sewerage Systems Development Plans for the areas of regions.
- To reduce the amount of atmospheric water discharged by the sewerage systems and to improve the conditions for direct infiltration of this water into soil environment.
- To identify, in the river basin district plans, facilities designed for treatment or neutralization of wastewaters and sewerage systems from industrial pollution sources posing risks in terms of failing to meet the requirements of national legal regulations and for certain industries also the requirements of Council Directive No 91/271/EEC. To examine, until the year 2010, the need of rehabilitation and intensification of the existing facilities designed for treatment or neutralization of wastewaters in industrial companies in a manner securing the required quality of the discharged wastewaters, and to prepare relevant measures.

- To accelerate removal of old environmental loads having an adverse impact on aquatic environment or exposing it to threat. In connection with the existing legal regulations it is necessary to secure financial coverage of the required schemes, using especially the Operational Programme Environment.
- To improve the morphological, environmental and aesthetic status of watercourses including riparian features by means of nature-friendly measures as well as the passability of watercourses for migration of fish and aquatic animals. To identify, in the river basin district plans, projects aimed at improving the morphological and environmental status of watercourses including riparian features, improving the passability of watercourses for migration of fish and other aquatic animals, and supporting development of indigenous fish populations. To base the selection of projects on the assessment of their impacts and effectiveness based on the register of measures agreed between the Nature and Landscape Conservation Agency and the respective watercourse administrators, and also on the Action Plan for Construction of Fish-passing Facilities. To assume, to this end, the framework of financial support resources, in particular the funds of the Operational Programme Environment. .
- To propose, based on assessment of the effectiveness, functionality and resistance of the existing hydraulic structures and their impacts (in particular weirs and other transversal barriers), potential commencement of proceedings for their modification or removal (in the event they are not functional) allowing to improve the morphological and environmental characteristics of watercourses.
- To provide for, in the long-term perspective, removal of sediments from water reservoirs and weir basins respecting suitable seasons of the year and other prerequisites for these activitities with regard to nature conservation.
- To include, in the programmes of measures in the river basin district plans, relevant measures in favour of protection of water and ecosystems associated with water, relating to farmland and forest land management (derived from observing the principles of "good agricultural and environmental status") and also measures aimed at improving the quality of life in rural areas. These measures will be based on implementation of subsidy titles included in the Programme of Rural Development for the period 2007- 2013.

D.1.3. Proposed changes to legislation and proposals for additions to technical regulations

- To amend, in the year 2007, Government Resolution No 61/2003 on indicators and values of permissible contamination of surface waters and groundwaters, elements of permission to discharge wastewater into surface waters and sewerage systems and on sensitive areas, and to develop methodological procedures for its application.
- To amend, until the end of the year 2007, Government Order No 71/2003 on designation of surface waters suitable for life and reproduction of indigenous fish species and other aquatic animals and on determination and assessment of quality status of these waters, as amended by Government Order No 169/2006 to update and modify the designation of these waters.
- To inspect, until the end of the year 2007, and to prepare, in co-operation with the Czech Institute of Standardization, the time schedule for transposition of all international standards (ISO) and European Standards (EN) mentioned in the EC or EEC Directives in the field of water, implemented into the system of the Czech technical standards (ČSN) with a priority matter to deal with the technical regulations in the field of rain water discharge, in particular from combined sewerage systems.
- To check, until the end of the year 2007, the special technical standards (TNV) in the field of water quality and to assess the possibility of their transformation into the Czech technical standards (ČSN).
- To transpose, until March 24, 2008, new Directive No 2006/7/EC on bathing water quality management and on repealing Directive No 76/160/EEC.
- To prepare, until mid-2008, based on the assessment of efficiency and effectiveness of implementing certain institutes and provisions in the Water Act, its amendment that will come in force in the year 2009. To follow especially these initiatives:
  - To verify the effectiveness of the institution of protected areas of natural water accumulation (up to the present designated by Government Orders No 40/1978, No 10/1979 and No 85/1981) in the field of making the protection of primarily groundwater quantity and quality more stringent,
  - To introduce the institution of protected areas register under Directive No 2000/60/EC,
  - To minimize the quantity and the types of pollution produced (use of non-phosphorus detergents and suitable cleaning agents, separated collection of unused medicines and used fats etc.),
  - To reduce microbial pollution discharged from municipal point sources of pollution by means of hygienisation of effluents from wastewater treatment plants into surface waters intended for abstraction of water for drinking water treatment and also into waters intended for bathing,
  - To adjust the system of charges for discharge of wastewaters into surface waters with regard to their quality or quantity taking into account the matter-of-fact priorities of water protection,
  - To adjust conditions for fishery management of ponds with regard to the impacts on the quality of water in watercourses,
  - To reduce pollution in watercourses in case of direct rain water discharge from municipal and industrial sewerage systems, in particular from combined sewerage systems by means of introducing the duty to separate removal of rain water and wastewater,

– To deal with discharge of wastewaters into surface waters without permission of water authority in case of small-scale sources (e.g. domestic wastewater treatment plants etc.) if a facility with sufficient and provable efficiency is installed,
– To specify the duties and rights of watercourse administration, owners of land comprising watercourse channels and owners of hydraulic structures with regard to conservation, protection and rehabilitation of the natural morphology and the ecological parameters of watercourses, differentiating dissimilar approaches to natural watercourse channels and watercourse channels regulated by structures,
– To introduce the institution of "groundwater administration" constituting an additional competence of river basin administrators,
– To adjust the competence of river basin administrators as the affected bodies in water administration proceedings regarding permission for surface water and groundwater abstraction,
– To introduce, apart from the institution of hydraulic structures, also the institution of "water management measures" which are not buildings and structures but similar to terrain modifications under the Building Act.

- To finalize, until the end of the year 2007, legislative work aimed at dealing with application of sludges and sediments in connection with Act No 185/2001 on Wastes and on amendment to certain other laws, and with the outputs of the implementation project for contaminated soils and sediments.
- To transpose, until January 16, 2009, Directive No 2006/118/EC on Protection of Groundwaters against Pollution and Deterioration.
- To add, until the end of the year 2009, specific conditions to measure II.1.2 Payments in NATURA 2000 Areas, and to Water Framework Directive No 2000/60/EC in the Programme of Rural Development to finance measures starting in the year 2010 and subsequently to prepare the respective government order regarding this measure.
- To evaluate, until the end of the year 2009, the efficiency and effectiveness of the Forest Act implementation, and to monitor primarily the initiatives for changes in the field of designating hydrologically sensitive forest areas and subsequently targeted support of the relevant management methods.

To monitor in the long-term perspective:

– Reduction of the size of the wastewater treatment plants bound to apply technologies for focused removal of nutrients.
– Introduction of objective monitoring of the use of fertilizers and pesticides in farming by quality control of directly affected surface waters and groundwaters, and introduction of adequate economic tools.

D.1.4. Good practice propositions

- For individual projects in conurbations with more than 2,000 PE included in the updated list considered by the Government in the framework of the Updated Strategy for Funding the Implementation of Council Directive as well as for relevant specific projects in conurbations with up to 2,000 PE and furnished with approved and well-functioning sewerage system, to draw up, in the river basin district plans, the time schedules for completing constructions which were not completed in 2008, including the method of funding. To observe, to this end, the need to meet the deadline on December 31, 2010 which will meet the requirement of the European Union for municipal waste water treatment in compliance with the Treaty of Accession of the Czech Republic to the European Union.
- To use, starting in the year 2007, a new system of monitoring and determining water status in a manner covering all significant anthropogenic pressures with regard to both the chemical and environmental status including hydromorphological conditions and including provision of the necessary source documents for evaluation of the status of water bodies and for draft river basin district plans, and also including provision of data for evaluation of the effectiveness of implementation of the programmes of measures. To introduce, in this context, systems of evalutation of water and water bodies status.
- To develop, relating to the adoption of amended Government Order No 61/2003, methodological procedures for introduction and implementation of a combined approach to determining emission limits for wastewater discharge, that can be applied for execution of the state administration in the field of water use,
- To seek to finalize determination of protection zones to protect the yield, the quality and the health security of the exploited major water resources.
- To pay attention to observing permitted water uses and minimum flows while using various methods of water management.
- To use the best available techniques in production and the best available technologies in the field of wastewater neutralization, that will become, in the process of specifying emission limits using the combined method, the maximum emission standard possible for sources of pollution.
- To ensure observing the principles of the "good agricultural and environmental status" and cross compliance standards focusing on protection of water and ecosystems associated with water, especially in protected areas under the requirements of Directive 2000/60/EC.
- To implement erosion measures as a part of comprehensive land consolidation.
- To reduce favourable conditions for eutrophication of watercourses and water reservoirs to mitigate seasonal deterioration of water quality.
- To look for the methods to prevent potential accidental pollution of waters, even for flood and drought occurrence situations.

- To improve conservation of water resources, in particular by means of improving the relevant institutions and tools to provide for effective and sustained exploitation of water resources with concurrent protection and reduction of adverse impacts on the status of aquatic ecosystems.
- To observe due execution of state administration in the field of water use, including the rules of operation and the rules for groundwater withdrawal with regard to safeguarding long-term good status of water bodies and adequate reinforcement of flood protection aspects.
- To promote, by means of an active state policy, implementation of the required technical measures with their investors.
- To keep an updated register of protected areas according to the requirements of Directive 2000/60/EC.
- To support protection and revitalization of aquatic ecosystems and ecosystems associated with water in a manner allowing to achieve good environmental status with a sound population of species and natural species diversity, including assessment of the importance of biotope elements for water ecology and proposed nature-friendly measures for their improvement.
- To rehabilitate the links between watercourses and their flood plains.
- To rehabilitate and protect channel structure and complexity corresponding to natural conditions, and to leave space, in suitable watercourse stretches, for natural morphological development.
- To minimize the distortion of morphology and environmental parameters of watercourses during their maintenance and building activities.

D.1.5. Measures to support economical use of water resources and technologies not causing stress on aquatic environment

- To introduce low-waste production technologies in industrial companies and re-use of the treated wastewaters in production, to apply advanced technologies for industrial wastewater pre-treatment and treatment with regard to removal of harmful substances and dissolved inorganic salts in wastewaters. This measure represents introducing the best available techniques into production processes with the aim to reduce as much as possible the adverse impacts of production processes on the aquatic environment, to significantly eliminate harmful substances in wastewaters by effective technologies (membrane processes, ion exchange). To create conditions for dealing with this problem in a systemic manner, including the possibility to use support funds of the European Union in the relevant programmes in the field of business activities support.
- To reduce, with a view to limiting acidification of water, gaseous sulphur and nitrogen emissions and to continue to strive for a successive change of forest cover structure. This measure constitutes programme, normative, economic, organizational, institutional and information tools for reducing acidification of waters and its adverse impacts. This measure also deals with differentiation of forest stand structure and texture, and improvement of tree species and age composition of forest towards natural tree species composition and age structure of forest. At the same time it is necessary to implement the updated Integrated National Programme for Reduction of Emissions in the Czech Republic" which should result in compliance with the emission limits for a number of substances, including sulphur dioxide and nitrogen oxides.

D.1.6. Impulses for R&D focus and promotion of international co-operation

In the field of research:

- To verify, until the year 2010, the need of rehabilitation and intensification of facilities for removal of effluents in industry to meet the requirements of the national legal regulations, and for certain industries, of the Council Directive No 91/271/EEC on treatment of municipal waste waters. This measure is aimed at mapping the status and the need of rehabilitation or refurbishment of these facilities in a manner allowing to safeguard the required level of quality of the discharged wastewaters.
- To verify the need to reduce the nitrate load of surface waters taking into account the cost-benefit analysis.
- To verify the methods for reducing the impacts of euthropication of surface waters (excessive development of cyanobacteria etc.).

In the field of international co-operation:

- To support joint programmes for measuring and evaluating water quality and quantity, sediments and live litoral communities.
- To implement coordinated preventive measures to cope with extreme pollution, in particular the pollution that could extend beyond the state border.
- To operate an integrated alert and warning system for extreme pollution situations and to update this system as necessary.
- To jointly analyze hydrological data and use this data for preparing water balance assessment.
- To set priorities at the international level and to coordinate the adopted and planned measures at both the national and the international level, aimed at reducing pollution spreading across the borders, and to safeguard sustainable use of water resources to meet the needs of municipalities, industry and agriculture, preservation of ecosystems as well as other requirements.
- To propose co-ordinated programmes of measures to reduce the quantity of harmful substances input into aquatic environment, time schedules and cost estimates in the international river basin plans.

- To secure, through the international committees for water protection in the Elbe River basin, the Odra River basin and the Danube River basin, informing the public on the proposed measures with a cross-border impact.
- To support co-ordinated scientific and research activities in the field of water protection and to facilitate mutual exchange of knowledge and experience both at the multilateral and bilateral level.
- To actively co-operate in development of plans of the international basins of the Elbe, the Danube and the River Odra and to prepare their national parts under Directive 2000/60/EC.
- To actively cooperate in development of programmes for monitoring in the international basins of the Elbe, the Danube and the River Odra and to prepare their national parts under Directive 2000/60/EC.
- To support activities within the Convention on Protection and Use of Transboundary Watercourses and International Lakes, the Protocol on Water and Health and the International Committees for Protection of the Elbe, the River Odra and the Danube, as well as other relevant contractual obligations of the Czech Republic.

D.1.7. Information tools for communication with the public and educational and demonstration projects

- To support improving the public awareness on all aspects of the issues regarding protection of water as a component of the environment and its importance; to use, to this end, the whole potential of communication tools and all suitable occasions (conferences, workshops etc.).
- To use the process of dealing with the river basin district plans and the international river basin plans for informing the public on water protection issues.
- To support setting up information centres with the relevant professional institutions, information systems, internet portals and map services.

D.2. General programmes of measures for flood protection and protection against other detrimental effects of water

A prerequisite for additional measures proposed is the implementation of adaptation measures included in the National Programme for Mitigation of Climate Change Impact in the Czech Republic, regarding in particular:

- Increasing the retention (accumulation) capacity of landscape and decreasing excessive erosion by storm water runoff,
- Minimizing watercourse pollution (preventing degradation of water by contamination),
- Increasing the protection of hydraulic structures against overflow (increasing the emergency spillway capacity),
- Increasing the size of manageable capacity,
- Improving the effectiveness of hydraulic structures management in non-stationary conditions,
- Higher flexibility and effectiveness of water service system management and integrated exploitation of water resources,
- Decision-making process in risk and uncertain situations,
- Rationalization of water management including reduction of water losses in water distribution systems,
- Urbanized areas insufficiently protected against floods.

D.2.1. Flood protection

The measures to meet the general objectives are designed in a manner ensuring that the principles of desired behaviour of the relevant entities during various human activities with regard to flood hazard are accepted in the rules of behaviour of all these entities, including water management personnel and state administration. At the same time, these measures are designed so as to create suitable economic motivating environment. This should result in a desired change in the attitude of the society to the risk resulting from flood hazard, and in creating better conditions for an adequate response of the society as a whole to this risk.

D.2.1.1. Economic tools and measures proposed to support public interests

- To use, in the years 2007-2012, financial support from the national funds, the European Union funds and the funds of the regional authorities in favour of:
  - Financing the investment construction of flood prevention structures and facilities, with focus on priority measures referred to by this Plan of Main River Basins of the Czech Republic; to use, to this end, in particular the European Union funds from the Operational Programme Environment, the Programme for Flood Prevention Support II, the Programme of Rural Development and the landscape-forming programmes of the Ministry of the Environment,
  - Financing the revitalization of aquatic environment and the projects for rehabilitation and enhancement of landscape retention capacity; tu use, to this end, in particular the funds of the State Environmental Fund, the European Union funds from the Operational Programme Environment, the Programme of Rural Development and the landscape-forming programmes of the Ministry of the Environment,
  - Provision of map documentation for flood risk assessment and handling from the Operational Programme Environment,
  - Provision of relevant studies (conceptual studies of flood protection alternatives, revitalization studies, studies of rainfall-runoff conditions and studies of technical flood protection measures, the regional flood protection concepts, technical-ecnomic analyses, risk analyses etc.),
  - Land consolidation in a nature-friendly manner, i.e. in compliance with the interests of nature conservation and landscape protection, using in particular support resources in the Programme for Flood Prevention Support II and the Programme of Rural Development.

– Measures in the public interest in forestry (forest ameliorations) and in agriculture, using support resources in the Programme of Rural Development,
– Financing preparatory work regarding project-related land-use planning and designing procedures of the relevant constructions and nature-friendly measures,
– Research and development.

- To ensure inter-departmental co-ordination in providing financial support resources.
- To produce, until the end of the year 2008, draft system of legislative and economic tools to reduce damages caused by floods and to stipulate co-financing of investment and operating costs of protective measures by the directly protected entities, the municipalities, the regions and the state. To monitor in particular the system of participation in the investment and operating costs of flood protection measures, engaging directly both the protected entities and the municipalities, regional authorities and state by allocated contributions to the financing of the measures, and thus to improve the effectiveness of spending the resources on flood protection. To implement, to this end, the requirement for proportional financial contributions of the entities exposed to threat to the costs of flood protection.
- To create economic incentives in agricultural support systems, allowing to convert the use of farmland in inundation areas (important for retention of flood runoff) to permanent grassland. To use, to this end, the Programme of Rural Development – measure II 1.2. Payments within NATURA 2000 Areas, and Water Framework Directive No 2000/60/EC, or measures II.1.3. Payments to Support Agri-environmental Measures.
- To create economic incentives in forestry and agricultural support systems allowing to preserve and in the long-term increase the content of humus in soil.
- To create a system of incentives stimulating reduction of the existing urbanization in flood plain areas, in particular of the active zones and localities where rescue and preventive works entail high costs (e.g. in form of offering building plots outside the areas exposed to threat, subsidies for removal of buildings and structures in the area exposed to threat etc.).
- To deal with the system of compensation for damages which may be incurred in case of farming in polders and inundation areas in flood situations.

D.2.1.2. Key measures complementing water management infrastructure

- To successively develop, until the end of August 2007, in the competence of the Ministry of the Environment, the concept of nature-friendly flood protection measures in the individual selected river basins under Appendix No 2.
- To specify, until the end of the year 2007, in the competence of the Ministry of Agriculture and based on conceptual studies, the designing of concrete measures in individual priority areas under Appendix No 2, financed by virtue of Section 86, Sub-section 1 of the Water Act by the state. To focus this measure matter-of-factly in compliance with the objectives of the Operational Programme Environment for the period 2007-2013, the Programme of Rural Development for the period 2007-2013 and the programme of the Ministry of Agriculture Flood Prevention Stage II for the period 2007-2012. Following a positive assessment, to reflect these measures in the river basin district plans and the general land use plans and to start investor preparation of these measures.
- To specify, until the end of March 2008, at the level of river basin administrators, watercourse administrators and the Nature and Landscape Conservation Agency in co-operation with regional authorities other priority flood prevention measures with a provable effect of flood risk mitigation. To focus this measure matter-of-factly in compliance with the objectives of the Operational Programme Environment for the period 2007-2013, the Programme of Rural Development for the period 2007-2013 and the programme of the Ministry of Agriculture Flood Prevention Stage II for the period 2007-2012. These measures will be reflected in the river basin district plans and subsequently implemented by river basin administrators, watercourse administrators and also by regional authorities and municipalities as the investors. These measures will primarily include:
  – Measures in the landscape implemented in a nature-friendly manner (natural overflow, polders, watercourse channel improvements in built-up areas of municipalities),
  – Measures to optimize water regime of landscape, to increase its retention capacity and to protect it against water erosion (especially revitalizing inappropriately regulated watercourse channels, inappropriate drainage and other interventions having adverse impacts on landscape water regime, reducing the occurrence of adverse water erosion impacts and decreasing the adverse impacts of surface runoff - infiltration zones and seeping depressed areas, renewal of flood storage),
  – Technical flood protection measures with retention (creating new flood storage capacity on watercourses, refurbishment and improvements of water reservoir structures with retention effect to increase the level of area protection, construction and refurbishment of buildings and structures in inundation areas),
  – Technical flood protection measures along watercourses (to increase watercourse discharge capacity /the channel and the surroundings in its close proximity/ in urban areas including its stabilization, to build and refurbish flood banks designed for local protection of the relevant area, to construct relieving channels and tunnels, and to increase flow capacity of weirs),
  – Improvement of the safety of hydraulic structures (refurbishment of weirs, refurbishment of outlet structures and emergency spillways and increase of their capacity),
  – Torrent control in forests (Section 35 of Act No 289/1995 on Forests, as amended).

To document, in the river basin district plans, also the anticipated time schedule for preparation and implementation of these flood prevention measures.

- To prepare, until the end of the year 2009, the concept for the remaining areas of the Czech Republic, and to launch their implementation within the Operational Programme Environment for the period 2007-2013.
- To develop and carry out, in the period 2007-2012, within the watercourse administrators' competence, construction projects proposed by individual entities and included in the documentation of the programme Flood Prevention Stage II. The prerequisite for development and implementation of these construction projects as well as their subsequent inclusion in the programme of measures in river basin district plans is a positive assessment stated in the feasibility study according to the methodology of the Ministry of Agriculture.
- To continue to develop, improve and modernize information system equipment of the flood forecasting and warning service at the national, regional and local levels. To use, to this end, the possibility of financial supports from the Operational Programme Environment.

D.2.1.3. Proposed changes to legislation and proposals for additions to technical regulations

- To transpose EC Directive on Assessment and Management of Flood Risks, once it has been adopted, into the legal regulations of the Czech Republic and to start its implementation, especially to amend the Water Act and its implementing regulations.
- To evaluate practical experience gained in the process of the application of generally binding legal regulations and technical regulations, in particular:
  – In the field of the applicability of the Water Act (until mid-2008):
  – To consider the cohesion of flood activity degrees and their announcing with the criteria for crisis state declaration under Act No 240/2000 on Crisis Management, as amended.
  – To introduce the obligation of the owners of hydraulic structures to prepare and to submit for approval to the competent water authority rules of operation for hydraulic structures significantly affecting flood flow and allowing the respective operation.
  – To prepare a proposal specifying the minimum mandatory content of flood evaluation documentation.
  – To lay down the obligations in the process of estimating the value and keeping records of flood damages and their analysis in relation to flood extremity.
  – To introduce permanent monitoring of the statistical indicator of the number of inhabitants living in an area exposed to higher-than-acceptable risk of flood hazard. This indicator would be used partly as a constant reminder of flood hazard in the respective municipality and partly as an indicator of flood protection improvement. The indicator may also be used as the basis for setting economic incentives aimed at reducing the risk of flood hazard (taxes, incentives, allocation of co-financing contributions etc.).
  – To specify in more detail mandatory content of studies of rainfall-runoff contidions in watercourses constituting documents to be used for obtaining information for proposals designating new inundation areas, flood hazard and flood risk maps as the basis of implementation of regulatory provisions in the land-use planning documentation regarding the areas exposed to flood hazard, and also for building permit procedure regarding constructions in these areas.
  – To provide for setting flood protection standards as a value of an acceptable overall risk level of flood impacts. Until these standards are set, to build on the recommended protection level values based on the probability of flood hazard recurrence, taking into account the risk analysis, as follows:
    - Historical town centres, historic built-up area – Q_{100}
    - Continuous built-up area, industrial parks – Q_{50}
    - Low-density housing and industrial estates, and continuous weekend housing – Q_{20}
    - Isolated structures – individual protection.
  – To facilitate simplification of designation of inundation areas by virtue of Section 68 of the Water Act.
  – To improve conditions for acquisition of land to implement revitalization and technical measures in public interest.
  – To simplify carrying out necessary repairs and standard maintenance of hydraulic structures impounding water, that can cause special flood.

In the field of land-use planning and building code:

  – To lay down general requirements for the possibilities of area utilization and for structures that could be situated into an area exposed to flood threat, in particular with regard to the effect of water upon the structures as well as the effect of the structure in question on runoff during various types of floods.

In the field of nature conservation and landscape protection :

  – To unify the terminology used in the Water Act and in the Nature Conservation and Landscape Protection Act, e.g. as regards terms such as watercourse, watercourse channel, flood plain, overflow land and inundation area, and to achieve, in this way, an integrated approach to the use of these areas, as well as to meet the objectives of the both above mentioned legal regulations.
  – To highlight the specific role of flood plains, i.e. a part of territory determined by natural conditions where it is advisable to prefer, on a permanent basis, the inundation function of these areas in the vicinity of watercourses (limits for building and other economic activities etc.).
  – To introduce tools to increase retention capacity of landscape.

In the field of agricultural land fund protection:

– To bar the change of culture into arable land in active zones, and also into forest along watercourses in close vicinity downstream of an urbanized area.

In the field of forestry

– To classify forests in inundation areas as special-purpose forest category under the Forest Act provisions, including the detailed specification of rules for storing the harvested wood mass and forest residues as well as removal of windthrow and broken trees.
– To favour differentiation of forest structure and texture as well as improvement of tree species composition, reduction of clear felling, support of natural forest regeneration.
– To strengthen new approaches to torrent and ravine control in a nature-friendly manner using careful methods.

In the field of crisis management and the integrated rescue system:

– To deal with optimization of the existing security system of the Czech Republic in parallel with the tasks resulting from Government Resolution No 1214 of September 21, 2005.
– To add the obligation of crisis bodies to proceed in accordance with flood plans and to consult with the competent river basin administrator and riverboard administrator decision-making on all measures in the course of floods, that may affect rainfall-runoff conditions in the river basin in a broader scale.
– To add the process of receiving and submitting reports of flood forecasting and warning service among the obligations of the integrated rescue system operation and information centres.

D.2.1.4. Good practice propositions

- To complete, until the end of the year 2008, designation of inundation areas along major watercourses with regard to built-up areas, in areas suitable for building on according to the general land-use planning documentation or, if necessary, also in other areas for the purpose of determining the size of the potential flood hazard areas and subsequently to reflect this in the river basin district plans. To use, to this end, financial support allocated in the Programme for Flood Prevention Support II – in the sub-programme Support of Inundation Areas Designation and Runoff Conditions Studies.
- To finalize, until the end of the year 2008, the first edition of the Map of the Inundation Areas in the Czech Republic 1:10 000 and to make this map available for the public to obtain information on flood hazard.
- To start the process of preparing flood risk maps and flood risk management plans.
- To provide at the level of regional authorities, until the end of the year 2008, in parallel with river basin district plans development, flood protection concepts specifying areas requiring protection with regard to their importance, including the standards of their protection and areas to be used for flood mitigation.
- To look for a suitable combination of landscape measures increasing natural storage and retardation of water in the respective area with technical measures affecting flood flows. To base the proposed flood measures on conceptual studies of rainfall-runoff conditions and studies of flood protection in coherent catchment areas, including analyses of factors affecting erosion and runoff conditions with a pre-selection of areas and land plots constituting sources of erosion and surface runoff, and analyses of conceptual options of dealing with flood protection including cost-benefit analysis and risk analysis. To furnish the studies of runoff conditions with financial support allocated in the Programme for Flood Prevention Support II – in the sub-programme Support of Inundation Areas Designation and Runoff Conditions Studies.
- To improve landscape ecological stability, in particular by creating and rehabilitating landscape features, by building components of a territorial system of landscape ecological stability, by optimizing stability of forest ecosystems through regeneration and improvement of tree species and age composition of forest stand.
- To optimize landscape hydrological regime by improving the retention capacity of landscape and by reducing the occurrence and the impacts of flood situations through implementation of measures favourable to nature conservation and landscape protection, by rehabilitating the natural hydrological regime of landscape and by water erosion protection.
- To pursue, as regards ecological stabilization of landscape, a coordinated approach to landscape as a whole, i.e. to both the agricultural land fund and the forest land resources including settlements when planning the respective measures.
- To make use of the measures to increase natural retention of minor watercourses as well as their inundations and retention of water in landscape.
- To implement the measures proposed as a part of a comprehensive land consolidation.
- To produce, in connection with operating measures components (flood forecasting and warning service, the integrated rescue system activity etc.) an outline of practical operating rules for flood protection systems (information transfers, management directives transfers etc.).
- To carry out a general review of flood forecasting and warning service, to be used as a basis for updating the Plan of Main River Basins of the Czech Republic in the year 2012.
- To initiate a process leading to a generally higher standard of flood plans, in particular concerning the following principles of flood plans updates:
  – To reflect the relations among the individual flood activity degrees and the measures which must be implemented when these flood activity degrees are announced,
  – To define the link between the implemented measures and the current or forecasted water level stages in the specified reporting or forecasting profiles/sites (even in situations exceeding the limit for the third flood activity degree).

– To define the link between the limiting water level stages for announcing and launching the respective flood activity degrees (under the Water Act) and the state of danger or the state of emergency caused by floods (under the Crisis Management Act),
– To ensure operational flexibility allowing to update information in the respective flood plan and its availability for the responsible entities, and concerning certain information also for the public, by successive use of the digital form of flood plans,
– To create conditions for municipalities with a minor watercourse flowing through their territory to build and maintain with their own budget funds automatic alert signal installations allowing to warn the population and providing remote access to the data in these stations for institutions safeguarding the activities of the flood forecasting and warning service.

- To permanently improve hydrological forecast systems, their reliability and informative capacity, and to extend the forecast period. To use, to this end, area information on precipitation to detail the rainfall-runoff modelling and to improve the quality of operating forecasts.
- To deepen the co-operation between the Czech Hydrometeorological Institute and river basin administrators in flood forecasting, in particular with regard to watercourses affected by operation of hydraulic structures. To develop a system of forecasting the anticipated scope of floods including water depth for major watercourses.
- To carry out probability analysis of the occurrence and the course of special floods caused by damage to major hydraulic structures and to suggest measures aimed at reducing the risk of special floods occurrence as well as their adverse impacts.
- To permanently create conditions for accelerated allocation of funds for rehabilitation of state-owned property hit by floods, for provision of state aid to other entities after floods during the crisis state periods declared in compliance with the effective legal regulations and as appropriate also for provision of state aid in the course of rehabilitation of the respective area, using the necessary funds from the state budget reserves or, as the case may be, from budget chapters of the respective ministries. Also self-governments (regional and local authorities) are recommended to make provisions for rehabilitation of their own property hit by floods and for provision of aid to other entities on their territories.
- To prepare, unless the ministries have already done so, their own state aid allocation programme tools, if necessary including the notification by the European Commission, allowing the respective ministries, that may be involved in providing this aid according to the general competencies under the Competence Act, to promptly provide state aid to non-governmental entities to restore the basic functions in flood-hit areas in compliance with the effective legislation (Act No 12/2002 on State Aid for Area Rehabilitation as amended by Act No 347/2005). To continuously update the prepared programme tools to make them available without major delay, if stipulated by the area rehabilitation policy adopted by the Government. Also self-governments (regional and local authorities) are recommended to prepare similar conditions allowing to provide aid from the public purse.
- To prefer, with regard to buildings and structures exposed to threat or activities duly permitted in the past period by administrative actions, at the level of the state administration central bodies (with a similar recommendation to regional and municipal authorities), such forms of support which allow the affected entities to acquire land replacement or adequate compensation for removing the assets and effects exposed to threat from overflow land. This does not concern buildings and structures or activities deliberately situated in the area exposed to threat, without or in contradiction with the relevant permissions.
- To delimit the areas suitable for building in inundation areas only in exceptional and specifically justified cases. To delimit and protect areas suitable for building to be used for relocation of housing and other structures exposed to high risk of flood damage occurrence.
- To reduce the existing housing and production functions of areas in the active zones of inundation areas and to bar rehabilitation of buildings and structures destroyed by flood with the exception of the necessary transport and technical infrastructure.
- To consistently delimit, in land use plans, areas exposed to flood hazard risk, including the regulatory provisions, using the Map of Inundation Areas in the Czech Republic 1:10 000 and the prepared flood hazard and flood risks maps as mandatory basis.
- To observe improving waterways facilities with mooring equipment for vessels with focus on mooring safety during flood water stages.

D.2.1.5. Suggestions for R&D focus and promotion of international co-operation

In the field of research:

- To establish, until the end of 2008, by a coordinated approach at the level of the Ministry of the Environment, in agreement with the Ministry of Agriculture and the Ministry for Regional Development and in co-operation with universities and other professional institutions, a long-term research and development programme dealing with extreme hydrological phenomena. To engage the respective universities and professional institutions in co-operation at international level.
- Research in the field of extreme hydrological phenomena must proceed ahead of time and permanently support flood protection development. Attention shall be paid in particular to the following matters:
  – Development and verification of flood risk assessment methods and methods to specify general limits of flood protection,

– Research and development of methods to specify design characteristics of floods with very low probability of occurrence,
– Utilization of information about spatial distribution of fluvisoils as an indicator of extreme floods load on flood plain areas,
– Research of methods to improve the quality of meteorological and hydrological forecasts,
– Research of the mechanism of flood situations occurrence and development,
– Research of the possibilities to affect retention capacity of landscape and flood flow by area measures in the catchment area, including quantification of this impact,
– Evaluation of the controlled and natural overflowing effects on the course of flood,
– Economic analyses of flood hazard in connection with hydrological and meteorological aspects of floods,
– Research of the process of affecting flood regime by anthropogenic impacts and climate changes,
– Specification of methods used to calculate the quantity and volume of sediments transported by water,
– Research and development of methods to determine design hydrological characteristics under non-stationary conditions taking into account the impact of the expected climate change (design characteristics of the future runoff regime),
– Evaluation of retention and retardation capacity of farmland and forest land with various economies,
– Research of methods and procedures to verify the effectiveness of measures used to improve flood protection.

In the field of international co-operation:

- To extend and to improve the quality of the forecasting and warning service in the international basins of the River Elbe, the River Odra and the River Danube, and, at the bilateral level, in the scope of co-operation regarding boundary waters. To safeguard the necessary scope of meteorological and hydrological data for joint flood forecasting systems in international river basins.
- To support, on part of the State, an overall involvement of professional institutions in relevant branches in international co-operation aimed at the research and development of the fields affecting improvement of flood protection in the framework of both European and world-wide co-operation (e.g. the Institute for Environment and Sustainable Development, the Joint Research Centre of the European Commission, the 6th and 7th Framework Programme of the European Union, the World Meteorological Organization, the International Hydrological Programme of UNESCO, activities under the Convention on Protection and Use of Trans-boundary Watercourses and International Lakes.
- To cooperate with countries having practical experience with projects aimed at extending the natural overflow areas (Germany, France etc.).
- To cooperate in the process of improving and updating plans of flood protection in international basins of the River Elbe, the River Odra and the River Danube, including setting up joint information systems.

D.2.1.6. Information tools for communication with the public and educational and demonstration draft projects

- To pay systematic attention, at the level of central water authorities in co-operation with regional authorities, to the process of informing and educating the public by preparing focused programmes/shows and notifications in writing for mass media as well as by arranging conferences and workshops focused primarily on popularization of the purpose and the function of management systems in water economy and for flood protection.
- To inform the public about the causes of floods, the principles of minimizing the damages, the importance and the possibilities of water retention in landscape as well as other flood prevention measures.
- To make available Atlases of Inundation Areas 1:10 000 as map equivalents to the Maps of Inundation Areas in the Czech Republic 1:10 000 on the public administration portal.
- To pay attention to installing information boards near major hydraulic structures, revitalization measures and structures designed to increase water retention in landscape with the aim to inform the public on the importance and multipurpose role of these structures and measures.
- To successively set up special information centres for the public near major water management systems.
- To provide for regular training of flood protection bodies including suitable simulators of potential flood situations.
- To train co-operation of these bodies with the integrated rerscue system components.
- To introduce a single system for education and training of the population exposed to threat and in particular of the managing and executive branches responsible for handling flood situations.

D.2.2. Protection against other detrimental effects of water

The individual types of measures to meet the objectives presented in Chapter C.2.2 are designed in a manner allowing to support reduction of the scope of damages in a short-term perspective, but primarily to outline the trend of measures for a long-term prospect, disregarding the risks of climate changes in the long-term perspective.

D.2.2.1. Economic tools and measures proposed to support public interests

With regard to the fact that both the technical and nature-friendly measures for protection against adverse impacts of dry periods are expensive in terms of investment and operation, they cannot be implemented without using the national financial support with

regard to the public interest defined in Section 2 of the Water Act. The financial supports will be provided especially in the following fields:

- Land consolidation arrangements including comprehensive land consolidation
- Improvement of runoff conditions in landscape, especially with the aim to increase retention capacity of landscape,
- Revitalization of river systems,
- Reduction of land drainage intensity by means of regulation in drainage systems,
- Rehabilitation of wetlands,
- Ponding and building small water reservoirs.

D.2.2.2. Key measures complementing water management infrastructure

- To monitor, based on the output of comprehensive land consolidation, the proposed erosion measures of organizational, agri-technical and technical nature such as depressed areas, ditches, afforestation, planting of suitable crops, appropriate method of field economy, creating hedgerows constituting wildlife refuges and renewal of permanent grass stands etc.
- To propose measures to increase retention capacity of landscape allowing water use in the course of a dry period, in particular:
  - Revitalization measures in landscape and on minor watercourses with regard to comprehensive approach to landscape water regime and various landscape types,
  - Removal of sediments from water reservoirs and fish ponds to increase the effective storage,
  - Rehabilitation and building of fish ponds and small water reservoirs,
  - Rehabilitation of wetlands,
  - Reduction of land drainage intensity by means of regulation in drainage systems,
  - Support of suitable methods of forestry and farming,
  - Measures for infiltration, storage and exploitation of rain water in the individual real estates.

D.2.2.3. Key measures complementing water management infrastructure

- To update until mid-2009, based on the precaution principle, the existing system of area protection of localities hydrologically and morphologically suitable in the long-term perspective for surface water storage as one of the adaptation measures dealing with the expected climate changes in the next 50-100 years, that may manifest themselves by an increased extremity of dry periods and flood situations occurrence. To amend, to this end, the institution of the Water Act (protected areas of natural water storage) by adding areas suitable for artificial surface water accumulation, including a specification of regulatory tools and provisions for area protection, and an authorization to designate these localities by the respective Government Order effective before the date of approval of the river basin district plans at the latest. To take into account, when preparing the register of localities suitable for surface water storage, the socio-economic impacts of area protection and the negotiations with the affected regional authorities and municipalities.
- To strengthen the position of water authorities allowing them, with professional assistance of river basin administrators and in co-operation with minor watercourse administrators, to influence area utilization in a manner supporting retention of water in the respective area. To provide for effective water management supervision of the process to meet the objectives and principles to improve water retention in the respective catchment area, especially with regard to the approved river basin district plans.
- To establish a procedure imposing on the owners of hydraulic structures impounding water the duties to install on an accessible place, for the purpose of inspecting whether the minimum flows are maintained, a water gauge or water level mark and, in case of frequent disputes, also to provide for regular reading and making them accessible to the public.

D.2.2.4. Good practice propositions

- To prepare, in the year 2008, a source document for designation of localities hydrologically and morphologically suitable for surface water storage based on:
  - Assessment of technical conditions with regard to feasibility studies of water management effects and the effectiveness of the individual localities,
  - Results of the assessment of the demographic, sociological and economic impacts of the individual localities,
  - Discussion with the affected municipalities, regional authorities, land use planning bodies, nature conservation and landscape protection bodies, hydrologists and river basin administrators.
- To make use of localities suitable for surface water storage in the framework of adaptation measures to mitigate the adverse impacts of climate changes (drought) only when all possibilities of nature-friendly measures were used and the adverse development of climate change confirmed. To implement the respective measures after reviewing the prevailing public interest as a part of land use change in the process of updating land use planning documentation under Act No 183/2006 on Land Use Planning, and Building Code (the Building Act).
- To produce, until the end of the year 2008, the concept of rain water uses in urbanized areas.
- To successively update the information about exploitability of major groundwater resources in the individual water bodies in connection with adoption of a single and well-proven methodology.
- To use comprehensive land consolidation to deal with the suitable size and form of land blocks with the aim to reduce the velocity and quantity of mechanical transport of surface-drained water and to support rain water infiltration.

- To establish interconnection between river basin district plans and comprehensive land consolidation solutions.
- To implement, in accordance with putting into practice the "good agricultural and environmental status" and cross compliance standards, effective organizational measures to mitigate erosive effects of water and to increase water infiltration by appropriate location of crops as well as by forestry and farming methods. To increase, in this respect, the activities of the competent supervisory and inspection bodies in the field of agriculture, forestry, water management and protection of the environment.
- To optimize the rates of irrigation with regard to various agricultural crops and to use irrigation equipment with minimum requirements for water consumption.

D.2.2.5. Impulses for R&D focus and international co-operation development

In the field of research:

- To focus the research, in connection with research planning in the field of climate changes, on the evaluation of the impacts on the capacity of water resources in the Czech Republic and on the verification of prospective water demand.
- To establish a research project aimed at development of methods for designing and control of water management systems with regard to the risks and uncertainties resulting from potential climate changes.
- To establish a project aimed at development and verification of methodology for evaluation of groundwater resources exploitability based on development of hydraulic and hydrogeological balance model, generally and widely applicable for all groundwater bodies.
- To reassess, with regard to climate changes forecasts, hydrological source documents and relevant mathematical models to successively update water management solutions relating to water reservoirs and water management systems, and subsequently operating regulations.
- To focus the research on rational use of irrigation systems in the long-term perspective taking into account the expected climate changes.
- To reinforce the research of nature-friendly measures to increase landscape retention capacity including quantification of their effects in hydrological regime.
- To focus the research on verifying the possibility to renew natural infiltration in flood plain areas along watercourses.
- To verify the possibility to use excess water in the existing water reservoirs for artificial recharge of groundwater aquifers used or planned to be used for groundwater abstractions.
- To support the research aimed at improving water retention in mountain forests by revitalization and change of forestry methods.

In the field of international co-operation:

- To continue, through the National Climate Programme, to interconnect the research in the field of climate changes with international research projects at the global level.

D.2.2.6. Information tools for communication with the public and educational and demonstration draft projects

- To increase public awareness of all aspects of issues regarding protection against the adverse impacts of dry periods, especially of the need to implement measures presented in parts D.2.2.2 and D.2.2.4 and of the need to implement nature-friendly measures improving water conditions in the landscape.
- To use the process of discussing river basin district plans with the public for informing the public about the issues of protection against the adverse impacts of dry periods.

D.3. General programmes of measures to meet requirements for water services

D.3.1. Economic tools and measures proposed to support public interests

- No change is expected regarding the validity of the economic tools in the period when this Plan of Main River Basins of the Czech Republic is in force.
- To secure the funds required to meet the objectives in the field of investments complementing water management infrastructure, it will be necessary, as long as this Plan of Main River Basin of the Czech Republic is in force, to use subsidies from the public purse. To use, to this end, the existing national financial support programmes for the period till the year 2010, financial resources of the European Union structural funds within the Operational Programme Environment for the period 2007-2013 and also the funds of the European Agricultural Fund for Rural Development for the period 2007-2013 (for public water supply and sewerage systems in small municipalities).
- To successively increase national and regional financial support resources in favour of:
  - Measures to improve the quality and supply of drinking water,
  - Substitution of objectionable individual drinking water resources by new public water supply systems connected to high-quality central water resources,
  - Rehabilitation of hydraulic structures for impounding and storage of surface water and groundwater intake,
  - Co-financing of construction and renewal of public water supply systems from the Operational Programme Environment,
  - Implementation of programmes of measures according to the river basin district plans (as of the year 2010).
- To implement Article 9 of Directive No 2000/60/ES and to assess, based on economic analyses in the river basin district plans, especially the following matters:
  - Social, environmental and economic consequences of paying all costs of water services from revenues from the users,

– Economically and legally different position of the ownership entities in the sector of drinking water supply and wastewater discharge and treatment in the light of different rules for generating renewal and development funds (depreciation) with the aim to achieve a long-term sustainable status of water management infrastructure.
– Unrealistic depreciable amount only partially compensated by the price provision.

- To strive for a long-term sustainable state of water management infrastructure of water supply and sewerage systems by implementation of plans for financing and rehabilitation of public water supply and sewerage systems and by implementation of real depreciation of tangible property.

D.3.2. Key measures complementing water management infrastructure

- To deal with improving the supplied drinking water quality and meeting drinking water demand, especially in extreme climate situations. To monitor, in particular, substituion or decontamination of the objectionable individual drinking water resources. To reduce adverse impacts of accidents and thus also water losses by accelerating rehabilitation of water supply networks which are obsolete and susceptible to failure.
- To identify, in river basin district plans, priority projects to improve the quality of supplied water and to meet drinking water demand in a manner ensuring that these projects correspond with the objectives of subsidy titles and the allocated funds in the Operational Programme Environment, the Programme of Rural Development and the programme Construction and Refurbishment of Water Supply and Sewerage Systems Infrastructure.
- To provide, for localities using water resources with unsatisfactory surface water quality for abstraction for drinking water treatment, the measures specified in the Plans for Raw Water Quality Improvement and to reflect these measures in the programmes of measures included in the river basin district plans.
- To reassess, with regard to priority use of groundwater for drinking water supply, the available groundwater supplies and to prospect for new water resources.
- To specify in the river basin district plans, with the aim to increase the level of meeting the demand for water services provided and based especially on the technical and safety supervision outputs, the priorities for successive rehabilitation of hydraulic structures on watercourses, to assess the level of their long-term sustainable use or, as the case may be, the necessary level of financial support from the national resources by virtue of Section 102 of the Water Act.

D.3.3. Proposed changes to legislation and proposals for additions to technical regulations

- To inspect and to prepare, until the end of the year 2007, in co-operation with the Czech Institute of Standardization, the time schedule for transposition of all international and European standards mentioned in the EC or EEC Directives in the field of water services, implemented into the system of the Czech technical standards.
- To evaluate practical experience with application of the Water Supply and Sewerage Systems Act and in this connection, as the case may be, to propose its amendment including the respective executive regulation.
- To provide technical regulation for effective and appropriate neutralization of wastewaters in small municipalities with up to 2,000 PE.

D.3.4. Good practice propositions

- To finalize, in the year 2007, the Plan of Water Supply and Sewerage Systems Development in the Czech Republic as a source document for the river basin district plans.
- To permanently pursue the safety and reliability of dams, weirs and other hydraulic structures allowing to impound and store water with the aim to increase the level of meeting the demand for provision of water services. To specify, based on the technical and safety supervision outputs, priorities of successive refurbishment of state-owned hydraulic structures and to assess the level of financial supports from national programmes.
- To evaluate, with regard to construction or refurbishment of hydraulic structures, the effectiveness and impacts of the operation or, as the case may be, the rehabilitation or removal of the respective structures. To respect, in the evaluation, the study of rainfall-runoff conditions, the environmental characteristics of watercourses and the status of water ecosystems and ecosystems associated with water.
- To permanently preserve water resources in the scope of duties of river basin administrator and watercourse administrator under the Water Act. To support observance of the duties of river basin administrators and watercourse administrators under the Water Act.
- To pursue, in order to increase the level of meeting the demand for water services in emergency or crisis situations, the following measures:
  – To update special parts of the regional Plans of Water Supply and Sewerage Systems Development with the aim to improve the quality of the integrated system for emergency water supply,
  – To follow, with regard to the risks of natural disasters, the strategy of supplying water to larger settlements from several interconnected water resources,
  – To follow, with regard to flood risks, the strategy of safe wastewater and rainwater discharge during floods, and to implement, to this end, the necessary technical measures in sewerage systems.
- To take into account, when updating water supply and sewerage systems development plans for the regions, the relevant measures included in the approved river basin district plans, regarding the requirements for water services and water protection. To concentrate, in the process of preparing water

supply and sewerage systems development plans, also on meeting especially the following objectives:

- To improve the quality of the supplied drinking water,
- To increase the level of safety of water resources as well as drinking water supply, in particular in extreme climate situations,
- To renew water supply systems which are obsolete and susceptible to failure with the aim to reduce adverse impacts of accidents and thus also water losses.

D.3.5. Suggestions for R&D focus and promotion of international co-operation

In the field of research

To initiate, until the year 2010, at the level of the Ministry of Agriculture (in agreement with the Ministry of the Environment) in co-operation with universities, professional institutions and the Water Supply and Sewerage Systems Branch Association of the Czech Republic, launching of research and development in the scope of the following priorities:

- To define systems for evaluating the condition of water supply and sewerage systems, allowing to objectively specify priorities for rehabilitation of water supply and sewerage systems and their funding,
- In the field of wastewater treatment:
  - Effect of aerobic and anaerobic methods of treatment of wastewaters from pollution sources in the range of 5-200 PE on groundwater quality in case of discharging wastewaters into soil layers and on surface water quality in minor watercourses,
  - To define the capacity of activated-sludge systems with concentrated biomass when reducing the aeration volumes and treating heavily concentrated waters,
  - To deal with nitrogen and phosphorus removal from wastewaters discharged into low flow streams in connection with the combined approach to setting discharge limits under Government Order No 61/2003,
  - To apply methods to reduce bacterial pollution in discharged wastewaters.

In the field of international co-operation

- To promote international contacts at the level of foreign professional associations and committees, in particular with the International Water Association (IWA), the International Committee of Lakes and Dams (ICOLD) and the International Committee for Irrigation and Drainage (ICID).
- To maintain and promote co-operation of river basin administrators with their relevant counterparts at the international level, in particular with the International Network of Basin Organizations (INBO).
- To maintain and promote co-operation with the European Union countries at the level of water directors as well as the ministerial departments competent in the field of watercourses and water supply and sewerage systems. To gain experience especially through implementation of Directive No 2000/60/EC, national legal regulations and other regulatory tools and to evaluate them with regard to their application in the Czech Republic, and to transfer the gained knowledge into water management practice.
- To maintain and promote co-operation with countries in the UN ECE region in the framework of the Convention on Protection and Use of Trans-boundary Watercourses and International Lakes and its Protocol on Water and Health, and to contribute to the exchange of information and expert support of less advanced countries.
- To co-operate, where appropriate and effective in terms of economy, with the neighbouring countries in the field of neutralization of wastewater.

D.3.6. Information tools for communication with the public and educational and demonstration projects

To permanently improve the approach to customers – consumers and users of water and thus to achieve the desired objective presentation of water service sectors to the public. The point of departure then will be the principle of providing reliable and high-quality water services in compliance with public interests and good morals. To implement, to this end, the following measures:

- To strive for putting in practice the application of the Water Supply and Sewerage Systems Act as well as certain relevant provisions of the Water Act and the Public Health Act by permanent education and arrangement of seminars and conferences.
- To improve the awareness of customers – water consumers in the field of the quality of final products and prices for provided services by comprehensible education. To this end, to establish and make better use of customer centres.
- To improve human resources quality and communication with customers by consistent education of the operators' personnel at all levels.
- To pursue ISO 9000 certification for certain activities and also the certification in the field of environmental management (EMS), increasing the confidence of the public and water users in the quality of the services provided as well as the guaranty of a systemic approach to environment protection on part of the operators.
- To implement methods allowing to compare the level of services provided by various providers of water services in the field of public water supply and sewerage systems based on determination of "success criteria".

Appendices

Appendix No 1
Main source documents

The main source documents for development of the Plan of the Main River Basins of the Czech Republic include the concepts and policies produced for medium-term periods after the accession of the Czech Republic to the European Union.

These documents comprise in particular:

At the national level:

- Strategy for Sustainable Development of the Czech Republic (Government Resolution No 1242 of December 8, 2004)
- State Environmental Policy of the Czech Republic (Government Resolution No 235 of March 17, 2004)
- Concept of Agrarian Policy of the Czech Republic for the period after the Accession to the European Union for the years 2004-2013 (Government Resolution No 584 of June 9, 2004)
- Concept of Water Management Policy of the Ministry of Agriculture for the Period after Accession to the European Union for the years 2004-2013 (Government Resolution No 617 of June 16, 2004.)
- Implementation Plan for the Environment, Sub-Area D – Water Quality, 2002 (updated by Government Resolution No 15 of January 8, 2003)
- Strategy of Flood Protection in the Czech Republic (Government Resolution No 382 of April 19, 2000)
- National Forestry Programme (Government Resolution No 53 of January 13, 2003)
- National Waste Management Plan of the Czech Republic (promulgated by Government Order No 197/2003)
- Raw Material Policy in the Field of Mineral Materials and Their Resources (Government Resolution No 1311 of December 13,1999)
- State Energy Policy (Government Resolution No 211 of March 10, 2004)
- National Programme to Mitigate Impact of Climate Change in the Czech Republic (Government Resolution No 187 of March 3, 2004)
- Health and Environmental Plan of the Czech Republic (Government Resolution No 810 of December 9, 1998)
- National Biodiversity Strategy of the Czech Republic (Government Resolution No 620 of May 25, 2005)
- Transport Policy of the Czech Republic (Government Resolution No 882 of July 13, 2005)
- General Plan of Transportation Infrastructure Development (Government Resolution No 381 of April 12, 2006)
- National Cycling Development Strategy (Government Resolution No 678 of July 7, 2004)
- Economic Growth Strategy of the Czech Republic (Government Resolution No 1500 of November 16, 2005)
- National Development Plan of the Czech Republic for the period 2007–2013 (Government Resolution No 175 of February 22, 2006
- Report of the Czech Republic according to Article 15 on analyses under Article 5 of Directive No 2000/60/EC (Report 2005)
- Regional Development Policy of the Czech Republic (Government Resolution No 321 of April 7, 2004)
- National Strategic Plan of Rural Development for the period 2007 – 2013 (Government Resolution No 499 of May 10, 2006)
- Programme of Rural Development for the period 2007 – 2013 (Government Resolution No 948 of August 16, 2006)
- Operational Programme Environment for the period 2007 – 2013 (Government Resolution No 1302 of November 15, 2006)
- National Programme of Nature Conservation and Landscape Protection (Government Resolution No 415 of June 17, 1998)
- Action Plan for Construction of Fish-passing Facilities (based on the National Programme of Nature Conservation and Landscape Protection)
- Reports on the State of Water Management in the years 1997–2005 (annual publication of the Ministry of Agriculture and the Ministry of the Environment submitted for information to the Government of the Czech Republic)
- State of the Environment in the Czech Republic in the years 2004 and 2005 (publication of the Ministry of the Environment according to Government Resolution No 446 of 1996, published in the period October-December of the following year)
- Annual water supply and sewerage systems reports for the years 1991 – 2005 (annual publication of the Ministry of Agriculture)
- Plans of Water Supply and Sewerage Systems Development for regions (approved by regional councils in the period September 2004 - May 2005)
- Preparatory work for development of the Plan of Main River Basins of the Czech Republic (Basic Scenario, Preliminary Survey of Significant Problems to Deal with, Main Principles and Methods of Dealing with Problems, Analysis of Localities Hydrologically and Morphologically Suitable for Storage of Surface Waters)

At the international level:

The Plan of Main River Basins of the Czech Republic is based on international commitments and conventions of the Czech Republic in the field of water and on documents produced and approved in the framework of these conventions, such as action plans and programmes for water protection, flood protection and other documents, constituted especially by the following acts:

- Agreement on the International Commission for Protection of the Elbe, signed on October 8, 1990 (effective as of August 13, 1993)

– Agreement on the International Commission for Protection of the Odra River against Pollution, signed on April 4, 1996 (effective as of April 28,1999)
– Convention on Co-operation for Protection and Sustainable Use of the Danube, signed on March 10, 1995 (effective as of October 22,1998)
– Convention on Protection and Use of Boundary Watercourses and International Lakes, signed on March 17,1992 (effective as of October 16, 1996), ratification deeds of the Czech Republic deposited with the depository on June 12, 2000, (effective with regard to the Czech Republic as of September 10, 2000) and the Protocol on Water and Health adopted to this convention
– Agreement between the Czech Republic and the Federal Republic of Germany on Co-operation concerning Boundary Waters in the Field of Water Management, signed on December 12, 1995 (effective as of October 25, 1997)
– Agreement between the Czechoslovak Socialist Republic and the Republic of Austria on Regulation of Water Management Issues of Boundary Waters, signed on December 12, 1970 (effective as of March 18, 1970)
– Convention between the Government of the Czechoslovak Republic and the Government of the Republic of Poland on Water Management in Boundary Waters, signed on March 21, 1958 (effective as of August 7, 1958)
– Agreement between the Government of the Czech Republic and the Government of the Slovak Republic on Co-operation on Boundary Waters, signed on December 16, 1999 (effective as of the same date)
– Framework Convention on Climate Change
– Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention)
– Convention on Biological Diversity
– Convention on Protection of European Fauna and Flora
– Convention on World Cultural and Natural Heritage
– Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
– Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
– European Convention on Landscape

Concrete source documents resulting from the work of the established international commitments for protection of the River Elbe, the River Odra and the River Danube and their river basins are constituted by the adopted action plans and programmes for water protection and flood protection as well as the mandatory content and structure of the Plans of the International Basins of the River Elbe, the River Odra and the River Danube.

Appendix No 2
Priority areas to address for flood protection of the relevant area
(related to Section 86, Subsection 1, of the Water Act)

The flood recurrence frequency and the level of hazard in the bellow areas determine the parts of the territory that were addressed as flood protection priority areas to be dealt with. The process of designing individual preventive measures will be governed by a comprehensive approach including:

- Relevant textual and mapping data and source materials concerning the relevant river basin district (in particular rainfall-runoff studies and alternative flood protection measures),
- Assessment of potential measures to optimize hydrological regime in landscape (the Operational Programme Environment - Priority Axis 6) and other technical measures to reduce the flood risk (according to the Operational Programme Environment - Priority Axis 1),
- Assessment of potential measures supporting the natural overflow of flood discharge,
- Assessment of potential technical measures (in the scope of Documentation of the Programme Flood Prevention Support II),
- Other measures proposed.

These measures will be technically specified in detail in the following stages of their development and also subjected to individual assessment of their impacts on the environment, including the impact on nature and landscape, on specially protected areas and on the system of Natura 2000 protected areas.

List of selected priority areas set out for preparing the concept of nature-friendly flood protection measures

Main river basin of the Elbe
- The Nežárka River basin
- The Dědina River basin
- The Ploučnice River basin

Main basin of the River Odra
- The Opava River basin

Main basin of the River Morava
- The Bečva River basin
- The Dyje (Thaya) River basin
- The Svratka River basin

List of priority areas set out for addressing the flood protection issues

Main river basin of the Elbe
- A package of flood measures on the River Lužnice and the River Nežárka
- Package of flood measures in the Downstream Vltava River Basin in the stretch Štěchovice – Mělník
- A package of flood protection measures in the middle Elbe area in the stretch Kolín – Mělník
- Flood protection measures in the valley of the River Dědina
- A package of flood protection measures in the area of the Lower in the stretch Štětí – Křešice – Hřensko
- Protection of Česká Lípa and the municipalities in the inundation area of the River Ploučnice including flood protection measures in the Svitávka River Basin
- A package of flood protection measures and protection of municipalities in the area of the confluence of the River Ohře and the River Elbe

Main basin of the River Odra
- Flood protection measures in the Liberec—Jablonec conurbation
- Flood protection measures to protect the municipalities on the Upper Opava River

Main basin of the River Morava
- Flood protection measures in Olomouc area
- Flood protection measures in Litovle area
- Flood protection measures in Uherské Hradiště area and Staré Město area
- A package of flood protection measures in the Lower Bečva River and on its confluence with the River Morava
- Restoration of dry polders and controlled inundations downstream of the Nové Mlýny Reservoirs
- Increasing retention on the confluence of the River Morava and the River Dyje (Thaya)
- Controlled inundations in Kroměříž area
- Controlled inundations in "Mohelnická brázda" area

Appendix No 3
Designation of sub-river basins of the national parts of international basins

National part of the international basin of the River Elbe	Number of hydrological order
5100 The Upper and Middle Elbe River Basin	
The River Elbe up to the River Úpa	1-01-01
The River Úpa and the River Elbe from the River Úpa to the River Metuje	1-01-02
The River Metuje	1-01-03
The River Labe from the River Metuje up to the River Orlice	1-01-04
The River Divoká Orlice	1-02-01
The River Tichá Orlice	1-02-02
The River Orlice	1-02-03
The River Elbe from the River Orlice up to the River Loučná	1-03-01
The River Loučná and the River Elbe from the River Loučná up to the River Chrudimka	1-03-02
The River Chrudimka	1-03-03
The River Elbe from the River Chrudimka up to the River Doubrava	1-03-04
The River Doubrava	1-03-05
The River Elbe from the River Doubrava up to the River Cidlina	1-04-01
The River Cidlina up to the River Bystřice	1-04-02
The River Bystřice	1-04-03
The River Cidlina from the River Bystřice up to the confluence and the River Elbe from the river Cidlina up to the River Mrlina	1-04-04
The River Mrlina and the River Elbe from the River Mrlina up to the River Výrovka	1-04-05
The River Výrovka	1-04-06
The River Elbe from the River Výrovka up to the River Jizera	1-04-07
The River Jizera bellow the River Kamenice	1-05-01
The River Jizera from the River Kamenice bellow the River Klenice	1-05-02
The River Jizera from the River Klenice up to the confluence	1-05-03
The River Elbe from the River Jizera up to the River Vltava	1-05-04
5210 The Upper Vltava River Basin	
The River Vltava up to the River Malše	1-06-01
The River Malše up to the confluence with the River Vltava	1-06-02
The River Vltava from the River Malše up to the River Lužnice	1-06-03
The River Lužnice up to the national border	1-07-01
The River Lužnice from the national border up to the River Nežárka	1-07-02
The River Kamenice and the River Nežárka up to the confluence with the River Lužnice	1-07-03
The River Lužnice from the River Nežárka up to the confluence with the River Vltava	1-07-04
The River Vltava from the River Lužnice up to the River Otava	1-07-05
The River Vydra and the River Otava up to the River Volyňka	1-08-01
The River Volyňka and the River Otava from the River Volyňka up to the River Blanice	1-08-02
The River Blanice and the River Otava from the River Blanice up to the River Lomnice	1-08-03
The River Lomnice and the River Otava from the River Lomnice up to the confluence the River Vltava	1-08-04
5290 The Lower Vltava River Basin	
The River Vltava from the River Otava up to the River Sázava	1-08-05
The River Sázava up to the River Želivka	1-09-01
The River Želivka up to the confluence with Sázava	1-09-02
The River Sázava from the River Želivka up to the confluence with the River Vltava	1-09-03
The River Vltava from the River Sázava up to the River Berounka	1-09-04
The River Rokytka and the River Vltava from the River Berounka up to the River Rokytka	1-12-01
The River Vltava from the River Rokytka up to the confluence with the River Elbe	1-12-02

5240 The River Berounka

The River Mže up to the confluence with the River Radbuza	1-10-01
The River Radbuza up to the River Úhlava	1-10-02
The River Úhlava up to the confluence with the River Radbuza	1-10-03
The River Radbuza from the River Úhlava up to the confluence with the River Mže, the River Berounka from the confluence with the River Mže and the River Radbuza up to the confluence with the River Úslava	1-10-04
The River Úslava up to the confluence with the River Berounka	1-10-05
The River Berounka from the River Úslava up to the River Střela	1-11-01
The River Střela and the River Berounka from the River Střela up to the Rakovnický potok Stream	1-11-02
The Rakovnický potok Stream and the River Berounka from the Rakovnický potok Stream up to the River Litavka	1-11-03
The River Litavka and the River Berounka from the River Litavka up to the River Loděnice	1-11-04
The River Loděnice and the River Berounka from the River Loděnice up to the confluence with the River Vltava	1-11-05

5300 The Ohře and the Lower Elbe River Basin

The River Elbe from the River Vltava up to the River Ohře	1-12-03
The River Ohře up to the River Teplá	1-13-01
The River Teplá and the River Ohře form the River Teplá up to the Libocký potok Stream	1-13-02
The Libocký potok Stream and the River Ohře from the Libocký potok Stream bellow the River Chomutovka	1-13-03
The River Ohře from the River Chomutovka up to the confluence	1-13-04
The River Elbe from the River Ohře up to the River Bílina	1-13-05
The River Bílina	1-14-01
The River Elbe from the River Bílina up to the River Ploučnice	1-14-02
The River Ploučnice	1-14-03
The River Elbe from the River Ploučnice up to the River Kamenice	1-14-04
The River Kamenice and the River Elbe bellow the River Kamenice	1-14-05

5400 The River Mulde – Elbe – Schwarze Elster

Right tributaries of the River Elbe from the Šluknovský výběžek area	1-15-01-001 up to 034
Left tributaries of the River Elbe up to the River Divoká Bystřice	1-15-02
Tributaries of the River Freiberger Mulde, the River Zschopau and the River Flőha	1-15-03
Tributaries of the River Zwickauer Mulde	1-15-04

5600 The Saale River Basin

Tributaries of the River Saale and the River Weiße Elster	1-15-05

5800 The Havel River Basin

Right tributaries of the River Elbe from the Šluknovský výběžek area	1-15-01-035 up to 053

National part of the international basin of the River Odra

6200 The Upper Odra River Basin

The River Odra up to the River Opava	2-01-01
The River Opava up to the River Moravice	2-02-01
The River Moravice	2-02-02
The River Opava from the River Moravice up to the confluence	2-02-03
The River Odra from the River Opava up to the River Ostravice	2-02-04
The River Ostravice	2-03-01
The River Odra from the River Ostravice up to the River Olše	2-03-02
The River Olše	2-03-03
Left tributaries of the River Odra from the River Olše up to the River Osoblaha	2-04-01
The River Osoblaha	2-04-02
The River Stěnava	2-04-03
Right tributaries of the River Kladská Nisa in Jeseník	2-04-04

6300 The Middle Odra River Basin

The River Bobr up to the River Kwisa	2-04-05
The River Kwisa	2-04-06

6400 The Lužická Nisa River Basin

The River Lužická Nisa up to the River Mandava	2-04-07
The River Mandava	2-04-08
The River Lužická Nisa from the River Mandava up to the River Smědá	2-04-09
The River Smědá and the River Lužická Nisa bellow the River Smědá	2-04-10

National part of the international basin of the River Danube

CZ1- the Czech part of the area of sub-river basin of the River Naab, a tributary of the River Danube

The River Naab and tributaries – the River Waldnaab	4-01-01
The River Naab and tributaries – the Kateřinský potok Stream	4-01-02
The River Naab and tributaries – the River Schwarzach	4-01-03

CZ2 - the Czech part of the area of sub-river basin of the River Regen, a tributary of the River Danube

The River Regen and tributaries of the River Grosse Regen	4-02-01
The River Regen and tributaries – the River Kouba	4-02-02

CZ3 - the Czech part of the area of sub-river basin of the River Ilz, a tributary of the River Danube

The River Ilz	4-03-01

CZ4 - the Czech part of the area of sub-river basin of the River Grosse Mühl, a tributary of the River Danube

The River Grosse Műhl up to the River Kleine Műhl	4-04-01
The River Kleine Műhl	4-04-02

CZ5 - the Czech part of the area of sub-river basin of the River Aist and the River Zwett, a tributary of the River Danube 4-04-03

CZ6 - the Czech part of the area of sub-river basin of the River Dyje (Thaya), a tributary of the River Morava

The River Dyje bellow the confluence of the River Moravská Dyje (Thaya) and the River Rakouská Dyje (Thaya)	4-14-01
The River Dyje (Thaya) from the confluence of the River Moravská Dyje (Thaya) and the River Rakouská Dyje (Thaya) up to the River Jevišovka	4-14-02
The River Jevišovka and the River Dyje (Thaya) from the River Jevišovka up to the River Svratka	4-14-03
The River Svratka up to the River Svitava	4-15-01
The River Svitava	4-15-02
The River Svratka from the River Svitava up to the River Jihlava	4-15-03
The River Jihlava up to the River Oslava	4-16-01
The River Oslava and the River Jihlava from the River Oslava up to the River Rokytná	4-16-02
The River Rokytná	4-16-03
The River Jihlava from the River Rokytná up to the confluence and the River Svratka from the River Jihlava up to the confluence	4-16-04
The River Dyje from the River Svratka up to the confluence	4-17-01

CZ7 - the Czech part of the area of sub-river basin of the River Naab, a tributary of the River Morava

The River Morava up to the River Moravská Sázava	4-10-01
The River Moravská Sázava and the River Morava from the River Moravská Sázava up to the River Třebůvka	4-10-02
The River Morava from the River Třebůvka up to the River Bečva	4-10-03
The River Bečva bellow the confluence of the River Vsetínské Bečva and the River Rožnovská Bečva	4-11-01
The River Bečva from the confluence of the River Vsetínská Bečva and the River Rožnovská Bečva up to the confluence	4-11-02
The River Morava from the River Bečva up to the River Haná	4-12-01
The River Haná and the River Morava from the River Haná up to the River Dřevnice	4-12-02
The River Dřevnice and the River Morava from the River Dřevnice up to the River Olšava	4-13-01
The River Morava from the River Olšava up to the River Myjava	4-13-02
The River Myjava and the River Morava from the River Myjava up to the River Dyje (Thaya)	4-13-03
The Kopčanský Canal	4-17-02

CZ8 - the Czech part of the area of sub-river basin of the tributaries of the River Váh, a tributary of the River Danube

Right tributaries of the River Váh	4-21-06
The River Váh from the River Kysuce up to the Púchovský Canal turnout	4-21-07
The River Váh from Púchovský Canal up to Trenčín	4-21-08
The River Váh from the Trenčín town up to the River Dubová	4-21-09

Appendix No 4
The list of abbreviations and explanatory notes

cross compliance	Denomination of farming standards relating to environment protection, quality and safety of food products, animal welfare and good agricultural practice
NUTS II	Territorial units of regions associated for statistical and analytical needs and for the needs of the European Union
EC	European Community
EEC	European Economic Community
PE	Population equivalent (defined by production of pollution amounting to 60 g BOD_5 per day)
BOD_5	Five-day biochemical oxygen demand with nitrification suppression
COD_{Cr}	Chemical oxygen demand by dichromate method

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Published by the Ministry of Agriculture of the Czech Republic
Těšnov 17, 117 05 Prague 1
http: www.mze.cz, e-mail: info@mze.cz

ISBN 978-80-7084-633-9