NATIONAL REPORT OF THE CZECH REPUBLIC ON IHP RELATED ACTIVITIES for the period 2004 – 2006

1.1 Activities undertaken in the period 2004 - 2006

1.1.1 Decisions regarding the composition of the IHP National Committee

The Secretariat of IHP Czech National Committee (CNC) works administratively at the Czech Hydrometeorological Institute. The Institution lies within the competence of the Ministry of Environment and employs relatively the most of hydrologists in the country. However CNC activities are guided generally so that they could serve to everybody engaging in the development of hydrology and its application to water management, namely to involved institutes of the Czech Academy of Sciences, research institutes, departments of universities, projection and operation enterprises. That corresponds to the CNC composition. The CNC chairman of is appointed by the Minister of Foreign Affairs as a member of the Czech Committee for cooperation with UNESCO. In the last few years there was quite a number of changes in the competences of responsibility for water resources in CR in comparison with conditions under those the original status of CNC was formulated. For that reason the CNC IHP prepares formulation of a new status, which would better meet the present requirements especially taking account of the accession of the Czech Republic (CR) to the European Union.

1.1.2 Status of IHP VI activities

Czech specialists are working mainly in frame of two FRIEND groups during IHP-VI:

- The activities in the Low Flow group in the preceding period were focused on finalisation of ASTHyDA Textbook and preparation of a new research project, on which Czech hydrologists collaborated.
  The textbook, whose title is “HYDROLOGICAL DROUGHT - Processes and Estimation Methods for Streamflow and Groundwater”, was published by Elsevier Science B.V. in the Netherlands in 2004 within their series Developments in Water Sciences.
  Future activities will be focused on co-operation in the new project “Water and global change” (WATCH), which is an integrated project that will be carried out within the framework of the Sixth Framework Programme EU on Global change and ecosystems. The project will bring together the hydrological, water resources and climate communities to analyse, quantify and predict the components of the current and future global water cycles and related water resources states, evaluate their uncertainties and clarify the overall vulnerability of global water resources related to the main societal and economic sectors.

- In the Flood Group the main achievements were the testing of the snow distribution model and the updating algorithms implemented in the Nordic HBV model on 10 Norwegian catchments, investigating the sensitivity of flood inundation modelling within the uncertainty framework on two rivers in the Czech Republic and creating a new frequency version of TOPMODEL with snow accumulation and melt and storms moving across the catchment.
  The group is going to continue the modelling work in the direction of the “Manifesto for the Equifinality Thesis” (Beven, 2005). The intention is to rely more on prior evaluations of model acceptability relative to observations and less on likelihood measures based on model residuals after a model has been run.

Models are going to be applied within a learning framework following Prof. Beven's idea of models of everywhere (Beven, 2006).

1.1.3 Decisions regarding participation in IHP-VII

The CNC called on the public involved to a discussion and formulation of participation in the IHP-VII phase on the occasion of a regular conference of Czech and Slovak hydrologists during the so-called „Hydrological Days" which took part in September 2005 in Bratislava (SR). The next revised version of the IHP-VII phase was sent to all potentially interested partners in CR in the second quarter of 2006. It follows from the existing information and discussions that Czech experts would like to participate in research of extreme runoff phases (within FRIEND projects), continuation of the GWES (Groundwater for Emergency Situations) project, regional collaboration in hydrology (especially with neighbouring countries) and postgraduate training of experts from developing countries.

1.2 Activities at national level in the framework of the IHP

1.2.1 National/local scientific and technical meetings

- The "22nd Conference of the Danubian Countries on Hydrological Forecasts and Hydrological Bases of Water Management" which was held in August 2004 in Brno (CR). 200 experts of 14 European Countries took part in it. The exact wording of the contributions is at disposal on CD ROM in English and German languages.
- The periodical conference "Hydrological Days 2005" was devoted to the theme "Hydrology for Integrated Management of Water Resources". The Conference in Bratislava (SR) was attended by 150 Czech and Slovak hydrologists and water management workers. The exact wording is at disposal on CD ROM in Czech and Slovak languages.
- The national "Workshop on the occasion of the 130th anniversary of hydrology on the territory of CR and the 100th anniversary of the activity of the hydrological workplace in Moravia" took part in Brno (CR). A publication from the seminar was published in Czech language.
- Cooperation with the Institute for Hydrodynamics of the Czech Academy of Sciences and the Czech Scientific and Technological Watermanagement Society in organizing the national workshop „Hydrology of Small Basins". Number of participants was about 100 experts. Papers are in proceedings from the seminar in Czech language.

1.2.2 Participation in IHP Working Group

Dr. J. Vrba coordinated an international project "Groundwater in Emergency Situations". Prof. J. Šilar worked in the same working group as an expert leader. The project results were select to represent UNESCO in the section of science at the World Conference on Water in Mexico City in 2006.

1.2.3 Research project supported

In addition to research projects supported from the IHP UNESCO budget also an extensive comprehensive exhibition „Water and Life" prepared by the National Museum in cooperation with CNC IHP and other partners was covered by the Government of CR. It was one of the largest exhibitions of that type in central Europe. It started in 2003 an the occasion of International year of Water and continued even

in 2004. It was attended by tens of thousands of visitors from our country and from abroad and also by many students of Czech schools.
Another important event there was evaluation of results of the Czech expeditions focused on geographical specification of the Amazon river springs. The research was leaded by Prof. Asist. B. Janský, a member of CNC IHP. The costs connected with evaluation of the research, preparations and translation of the book summarizing results of all expeditions were covered by various national and foreign sponsors. The CNC IHP recommended that the book was published in the edition series of UNESCO.

1.2.4 Collaboration with other national and international organizations

The most frequent foreign contacts of Czech hydrologists are with partners of the neighbouring countries. They are engaged in problems of boundary waters and other common hydrological problems. A long-lasting successful collaboration included into IHP-VI is called as “Regional Collaboration of the Danubian Countries in Hydrology”..
There is also running collaboration with many other committees (NC) operating in the Czech Republic and focused on water issues, such as NC for International Strategy for Disaster Reduction, NC for the Czech National Climate Programme, NC for Geophysics and Geodesy, NC for activities of the International Commission for Irrigation and Drainage and NC for activities of the International Oceanographic Commissions of UNESCO.

1.2.5 Other initiatives

The Czech Republic contributes to the ICARE (Inventory of the Catchments for Research in Europe) database, which contains meta-data about 142 basins and several sets of validation data measured in a short time interval. The database is maintained by CEMAGREF in Lyon, France.
The Northern European FRIEND Project 5 “Catchment hydrological and biogeochemical processes in changing environment” including Czech collaboration is focused on gaining a better understanding and a synthesis of the processes and mechanisms responsible for streamflow generation, variation in flow components and cycling of the main nutrients in different physiographic and climatic conditions.

1.3 Educational and Training courses

1.3.1 Contribution to IHP courses

In view of a new conception of postgradual hydrological education within UNESCO the Czech Agricultural University (CAU) in Prague finished in agreement with CNC IHP an international hydrological course “Hydrological Data for Water Resources Planning”. Instead of it a two week international seminar called “Disaster Prevention and Reduction with Emphasis on Floods and Droughts” was introduced. Top foreign and national experts are invited to lecture and explain select actual problems. Number of foreign participants is about 30 specialists. The running costs connected with organizing the seminar are covered with support of CAU, Ministry of Education of CR and foreign sponsors.

1.3.2 Organization of specific courses

Czech NC Man and Biosphere together with CNC IHP prepare and present within the framework of the UNESCO Participation Programme a proposal for organizing an international course called “International Course on Ecohydrological Approaches for Wise Use, Restoration, Management and Conservation of Fresh Water Wetlands”.

1.3.3 Participation in IHP Courses

The Czech experts used to take part in an international postgradual course in Bed Dagan, Israel. In the last two years CNC mostly registers their participation in the international postgraduate short course arranged by CAU (see 1.3.1)

1.4 Cooperation with the UNESCO-IHE for water Education

The contact of the Czech hydrological teachers with IHE Delft is running at university level. Occasionally it comes to personal contacts (e.g. Prof. M. Abbott invited to ČR).

1.5 Publications

Members of CNC assisted in preparing a comprehensive educational publication "Water in the Czech Republic". In the present time they assist in its English version. Another publication activity (see in item 1.2.1)

1.6 Participation in international scientific meetings

1.6.1 Meetings hosted by the country

The "22nd Conference of the Danubian Countries on Hydrological Forecasts and Hydrological Bases of Water Management" in Brno (CR) was the most important event.

1.6.2 Participation in meetings abroad

Relatively the largest participation of Czech experts was recorded within the FRIEND project:

- April 2004 Nice during EGU,
- July 2004 London during the conference "Hydrology Science and Practice for the 21st century",
- October 2005 Tromso during "International Conference for ACTIF, FLOODMAN and FLOODRELIEF projects",
- April 2006 Vienna during EGU.

Within ERB the Czech experts took part in international conferences in Turin and in Sofia. The Czech also took an active part in an international conference called „Mountain Hydrology" in Berchtesgaden. Regularly every year a CNC representative and experts participate in fulfilling of the tasks arising for CR from „Regional Cooperation of the Danubian Countries in Hydrology".

1.7 Other activities at regional level

1.7.1 Institutional relationship

CNC assisted in joining the Czech Republic in IOC UNESCO activities (otherwise see in item 1.2.4).

1.7.2 Completed and ongoing scientific projects

A plan for continuation of GWES focused on conflict situations is developed. The formulation of CR participation in the VII. phase is running.

2. FUTURE ACTIVITIES

2.1 Activities planned until December 2007

- Collaboration at organizing an international conference „Biohydrology“ in Prague 2006.
- Collaboration at organizing an international conference „Groundwater Modelling“ in Karlovy Vary in 2006.
- Discussions about a new status of CNC IHP in 2007.
- Fulfilment of the role of a respondent of hydrological data users sphere in the EU project „New water“.

2.2 Activities foreseen for 2008-2009

Participation of the Czech institutions in investigating research projects of the IHP-VII phase.

2.3 Activities envisaged in the long term

Top priority hydrological problems and needs in Czech Republic include:

- Mitigating damages caused by natural disasters particularly floods and droughts,
- Application of the sustainable development principles in practice,
- Revitalisation of the hydro component of the landscape,
- Application of the EU Framework Directive on Water.