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SCIENCE FOR THE CARPATHIANS



Strategy Development and Networking Workshop

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Workshop Report

WG5: Carpathian Waters

The state of research in the Carpathians varies between countries. The research results are dispersed and non-homogeneous. The discussion in the Water Group showed some recent and potential research topics undertaken and being developed in water science in the Carpathians. These are:

- land use change impact on water quality;
- identification of water resources (dimension, spatial distribution, temporal variability) in accordance with to the catchment boundaries;
- hydrological and biological inventory of wetlands;
- identification of ecological services provided by the Carpathian rivers and related wetlands;
- snowpack studies (snowpack recognized as an important factor influencing water resources and man activity in mountain regions);
- extreme hydrological events focused on the future;
- hydrochemical balance of catchments;
- identification of types of farming suitable for correct water management;
- development of scenarios of water balance elements changes according to climate change in all parts of the Carpathians.

Studies on long-term tendencies of basic hydro-meteorological parameters should not be given up and should be continued using better and more advanced methods. The same with monitoring of lakes, streams and biota. Palaeolimnological research (e.g. bottom sediment analyses) are important and necessary to identify natural and anthropogenic processes which might help to assess future climatic changes and their consequences. Some Carpathian lakes have not been investigated at all (e.g. Ukrainian ones). It must be considered that climate is one of several factors influencing water resources.

The listed proposals require the creation of a common data base of hydro-meteorological parameters in the basins of rivers draining the Carpathian mega-region; such a data-base should be easily accessible for scientists involved in the Carpathian project.

All these activities should be harmonized according to "a cascade relationships" as "climate – hydrology – water management" and they need common efforts of the particular Carpathian

countries (various organizations and institutions should be involved: weather and climate national services, universities, academies of sciences, and water management services). Research should be subordinated to proposals of basic strategies to secure water supplies and improve ecological health of water resources affected by climate change. It is worth to mention, that the application of some research results for climate change related processes the need for mitigation has been well recognized in some regions and particular strategies were developed e.g. in Slovakia.

