

EFC Working Party on the Management of Mountain Watersheds

CZECH REPUBLIC COUNTRY PAGE

Geographical setting

The territory of the Czech Republic (Central Europe: 48 – 51° N, 12 – 19° E, area of 79,000 km²) consists of rolling plains, hills, and plateaus surrounded by low mountains (Sudeten). Elevation extremes are 115 m (Elbe River outlet) and 1,602 m (Giant Mts.).

In the Czech Republic, mountain regions are identified by gradients from 300 to 600 m. Thus, mountain watersheds represent almost 40 % of the country's territory. The timberline is considered at 1,300 m, and only 1 % of the country is located in elevations above 1,000 m. Therefore, mountain catchments in the Czech Republic are mostly forested. Since the end of the 13th century, the area of forests (34 %) did not change significantly. However, the composition of native species in the mountains (mixture of common beech - *Fagus sylvatica*, common silver fir - *Abies alba*, and Norway spruce - *Picea abies*) transformed to spruce plantations (particularly at the end of the 19th century).

Climate on the territory of the Czech Republic is temperate with hot summers and cold, cloudy and white winters (including categories Cfb – marine west coast, Dfb – humid continental, and Dfc – sub-arctic of the Köppen classification). Considering the recent climate normal (1961-1990), the country's long-term mean annual water budget is: 693 mm of precipitation, 499 mm evaporated, and 194 mm run-off. The country basin is drained by two main river systems (Elbe and Morava). The approximate total length of watercourses is 76,000 km. Some 60,000 km of relatively small headwater streams are controlled by administration of forestry units, national parks or protected landscape regions. The gradient of most streams (92 % of water courses) does not exceed 10°. Water reservoirs (cca150 water management units and 21,000 fish-ponds) form an inherent part of the countryside. The total volume of water reservoirs is approximately 5,800 million m³. The recent water supply system in the Czech Republic is oriented mainly to the exploitation of surface waters (80%). The water availability per person and year is about 1,450 m³ while the considered safe water availability is 1,700 m³. However, the potential water resources in the Czech Republic are nowadays exploited only by some 50 %.

Flooding is supposed the most serious natural hazard in the Czech Republic.

Policies

The management of mountain watersheds in the Czech Republic is controlled mainly by the Water Act (254/2001). The main principle of the law is an integrated approach to control the recharge of water resources: quantity and quality. The law regulates namely activities in Protected Headwater Regions (proclaimed already by decrees 40/1978 and 10/1979 of

the Czech Government). The Protected Headwater Regions extend on 16 % of the country's territory. In these regions it is forbidden to reduce the percentage of woodland, to prepare soil by drainage, to harvest peat and minerals or to deposit wastes. Five river basin authorities are responsible to coordinate and control regional water management activities within systems of five main rivers and their watersheds. They are also involved in the process of national and international coordination in the frame of larger European basin units (Elbe and Donau).

Small headwater streams are controlled also by the Forest Act (289/1995) respecting categories of Protective Forests (steep slopes or wetland forests) and particularly Special Forests (forests in hygienic buffer zones of drinking water supply etc.) with limited forestry practices. This law determinates also the traditional activities on torrent control and soil amelioration to reduce risks of catastrophic floods and soil erosion and.

Wetlands (mostly peat-bog spots) and processes of revitalization in watercourses are controlled by the Act on Nature protection (114/1992). The Law on the Environment (17/1992) introduced in the Czech Republic processes of EIA (Environmental Impact Assessment) and SEA (Strategic Environmental Assessment) according to the standard European legislation. Mountain watersheds are affected also by the European system of nature protection (NATURA 2000) supporting again wetlands, revitalization of watercourses and sensitive forest stands.

Outlook

The most important environmental problems in the Czech Republic are namely intensive agriculture, opencast coal mining, soft coal combustion, air pollution, acid atmospheric deposition, and decline of mountain forests and waters. Moreover, an exact evaluation of recent and potential impacts of the global climate change on a mountain watershed is complicated and uncertain. A significant decline in number of floods observed there since the end of the 19th century corresponds particularly to the reduction of winter flooding related to an overall warming of Central European winters. However, the relatively flood-free period came to an abrupt end with the two recent catastrophic floods of July 1997 and of August 2002. To solve all these problems, the control of mountain watersheds still needs a more integrated approach. The management of mountain watersheds also require better understanding of watershed processes, public awareness, political support and involvement of local citizens.

A progress in increasing stability of mountain settlements might bring the "Countryside Renewal Program" (European Commission, 2006) oriented on restoring socio-economy, culture, landscape and environment of small villages. It is important that the principles of sustainability adopted by Czech Institutions include the protection of water quality and landscape retention capacity. The priority of the Czech national forestry program is to create more stable forest stands near the native composition. The plan is to increase the percentage of broadleaved trees from recent 23 % to original 65 %. Widely discussed are now also subsidies to forest owners for "environmental services" of forest stands.

