



**TRANSNATIONAL INTEGRATED MANAGEMENT OF
WATER
RESOURCES IN AGRICULTURE FOR EUROPEAN WATER
EMERGENCY CONTROL (EU.WATER)**

**SUMMARY OF
REGIONAL REPORT**

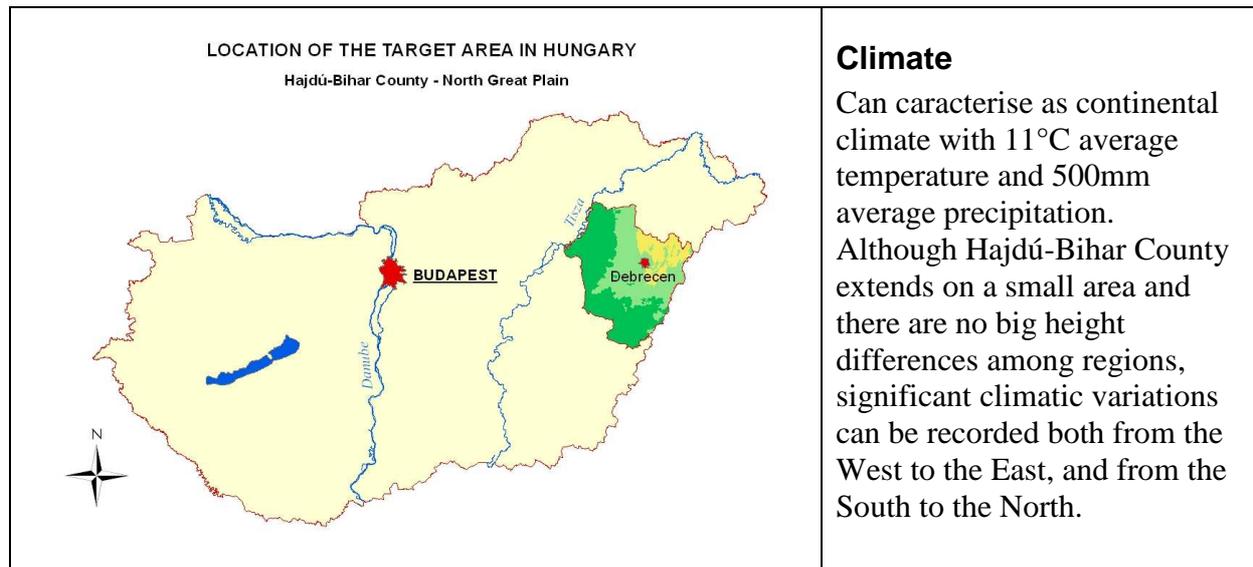
Tisza river basin – Hajdú Bihar county, Hungary

**Centre for Environmental Management
and Policy, University of Debrecen**

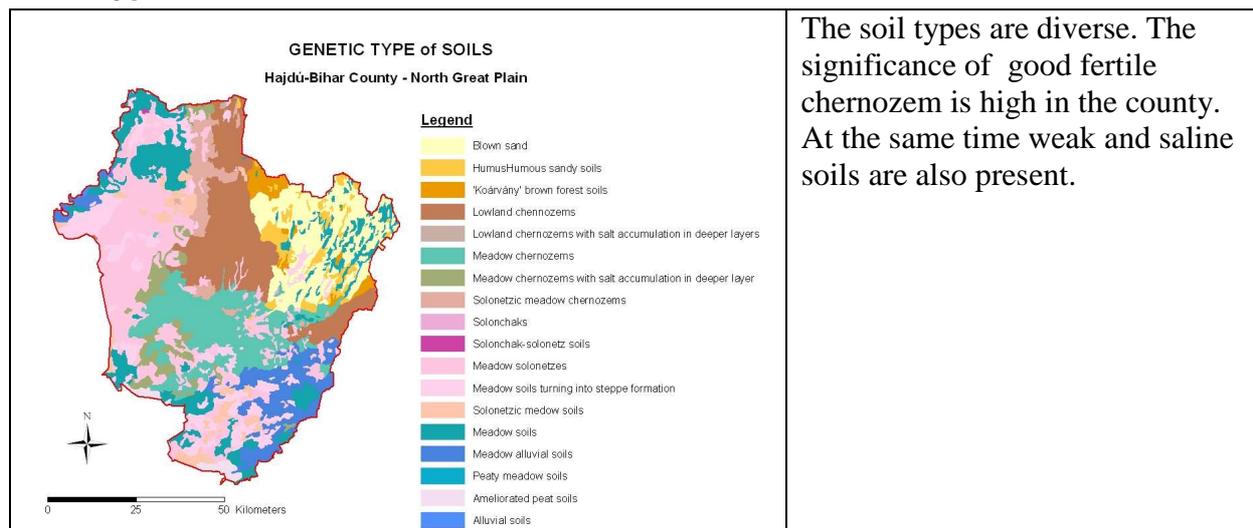
**Trans-Tisza Region Environmental ,
Natura Protection and Water Inspectorate**

Debrecen, 2010

Hajdú-Bihar is an administrative county in eastern [Hungary](#), on the border with [Romania](#). Capital is Debrecen with 207270 inhabitants (2nd largest city in Hungary).



Soil Types



Agriculture in Hajdú-Bihar County

With a territory of 621,056 hectares, Hajdú-Bihar County is the fourth largest in the country. The total area under cultivation is 544,472 hectares, 334,203 of which is arable land. The county ranks second in Hungary in this respect. This is what determines the importance of the county from the point of view of agricultural output.

The natural conditions are favorable for the cultivation of all kinds of crops.

Besides co-operatives, private and family farms also play an important part in this sector. Half of the area of the county is in the use of private farms.

The structural change influenced land division according to lines of cultivation to a slight degree. 14.3% of the county's area is uncultivated land. The most frequently cultivated plants are corn, wheat, sunflower, sugar beet and potato.

Livestock farming is the most productive agricultural branch in the county. It holds more than 45% of the whole agricultural output of the county. Cattle-breeding is the most important kind

of livestock-farming in the county. Swine-breeding has gone through a number of crisis periods in the past 10-15 years, as there were only short periods when production costs were recovered.

Characteristics of water systems in the area

In the project area there are only a few natural water flows with significant runoff. In north – north-west there is River Tisza. There is only a little money for the establishment and maintenance of inland water systems, but at the same time the vulnerability against inland water flooding has increased in the settlements and in agricultural areas too in the last decade. The county may well be poor in surface waters, but it is rich in groundwater. When it comes to groundwater, the picture is quite different. Groundwater lies deeper above the elevated Pannonian block. Thus, groundwater above the elevated Pannonian block lies 6-20 m deep in Hajdúság, 3 m deep in the Southern Nyírség, but only 1-2 m meters below the surface in Hortobágy. The salt content of groundwater ranges on a wide scale. It is highest in Hortobágy, 2-3 g/l, but it can also be as high as 10-20 g/l.

Regarding water management, most of our stock of water is originated from River Tisza. The users obtain its water through the Irrigation-system of Tiszalök, whose most important two elements are the Keleti-főcsatorna (Eastern-main canal) and the Nyugati-főcsatorna (Western-main canal). However this biggest irrigation system of our country has been established for irrigation, it also serves other significant water management tasks such as water supply for fish ponds, conservational tasks (ecological water demand, water supply for wetlands), supply of drinking-water and water for industry. Besides these it is essential for life in itself and has an important role in forming the landscape.

Main water consumption sectors in the area are:

Agriculture
Fish ponds
Nature protection
beside industry and drinking water.

Nature Conservation

Hajdú-Bihar County has internationally recognized natural monuments. The roots of environment protection in Hungary can be traced to Hajdú-Bihar County, more precisely to its center, Debrecen, as a part of the Great Forest (Nagyerdő) in Debrecen was the first region in the country to become an environmentally protected area in 1939. Moreover, the first national park of the country, the Hortobágy National Park, also came into being in Hajdú-Bihar County. The Park received the honor of being declared a World Heritage site on December 1, 1999, by decision of the UNESCO World Heritage Committee. The flora and fauna of the park are unique.

80% of the area of the Hortobágy National Park can be found in Hajdú-Bihar County.