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STRENGTHENING COOPERATION BETWEEN RIVER BASIN MANAGEMENT PLANNING AND FLOOD RISK PREVENTION TO ENHANCE THE STATUS OF WATERS OF THE TISZA RIVER BASIN

Interreg
Danube Transnational Programme
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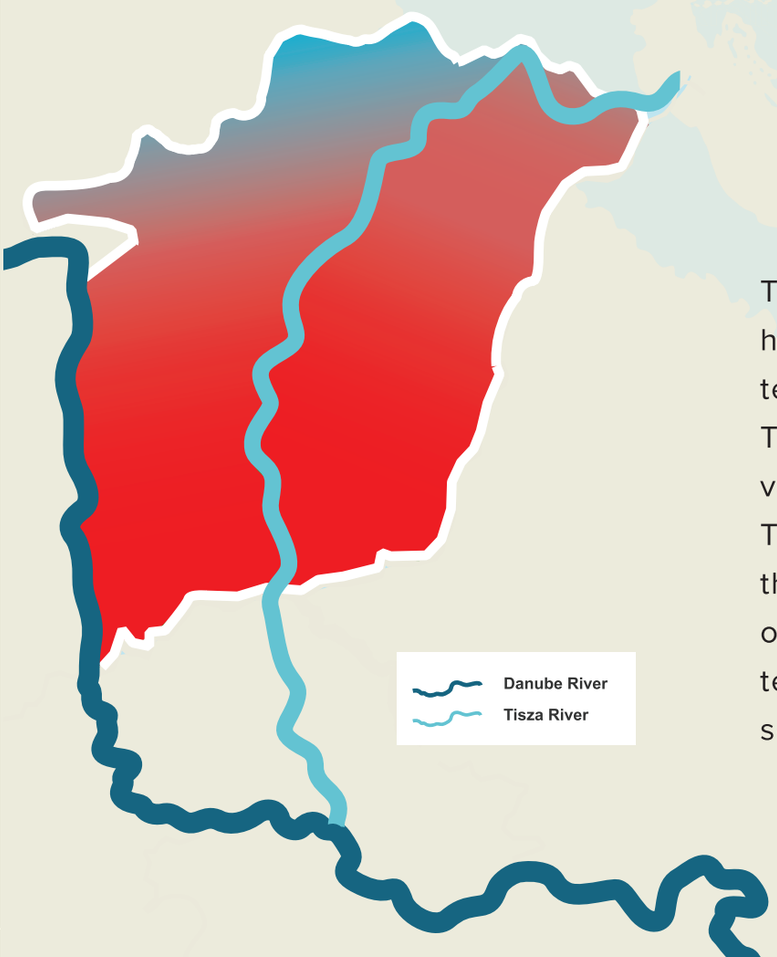
The Tisza River Basin drains an area of 156,869 km^2. Five countries share the Tisza River Basin, the largest sub-basin of the Danube River Basin: **Romania, Ukraine, Slovakia, Hungary and Serbia.**

The Tisza is the longest tributary (966 km) of the Danube. The Tisza River can be divided into three parts:

- **The Upper Tisza**
- **The Middle Tisza**
- **The Lower Tisza**



The Hungarian part of Tisza sub-basin has the warmest summer; the mean temperature is around 21°C in July. The average yearly amount of rainfall varies between 400 and 700 mm. The average annual temperature in the mountains is 8-9°C. In the middle of the Great Plain, the annual average temperature is between 10-11°C. In the south-eastern borderline it reaches 12°C.

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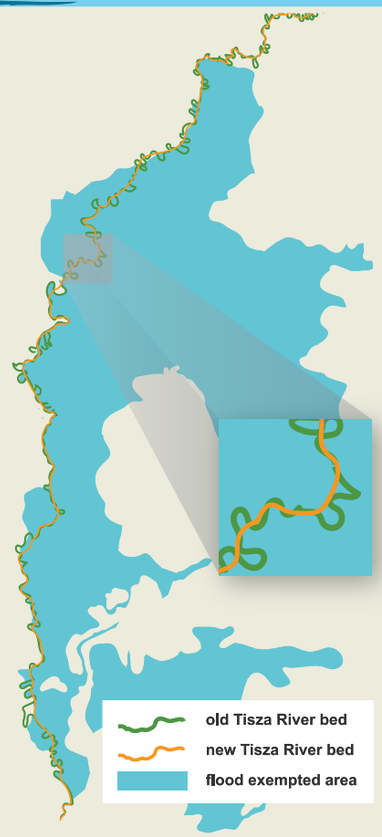
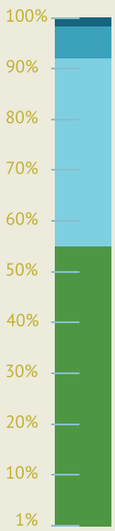
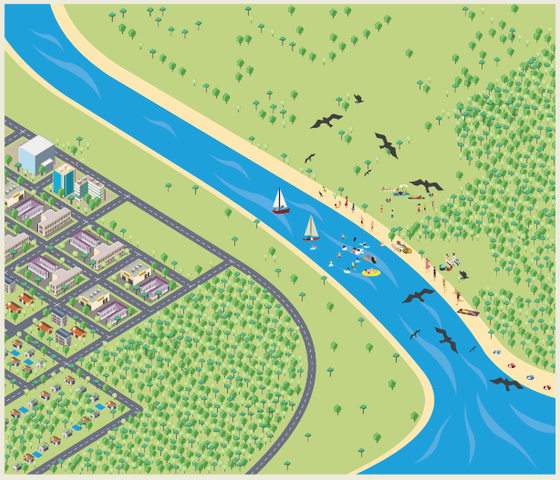
The length of Tisza was 1,400 km before the river regulations that started in the 19th century. The river regulation means that the meanders of Tisza were cut from the river and one main riverbed was created. The purposes of the regulations were to increase the size of arable lands and control the flood waves. As a result of these works the total length was shortened by approximately 30%, it is 966 km today. The river and its riparian habitats are now among flood protection dikes.



THE STATUS OF WATER BODIES IN THE TISZA RIVER BASIN



The Tisza River Basin's rivers are divided to water bodies that are the planning elements of the river basin management plans and are also the units where the water quality and quantity are assessed. **In total 55% of Tisza River Basin water bodies' status is natural, 37% is heavily modified and 6% is artificial.** The rest is undefined due to missing data. The water bodies are also classified by quality elements and their ecological status is defined.



Natural water body ⟶
is the status if due to moderate human impacts the river's character didn't change significantly.

Heavily modified water body (HMWB) ⟶
refers to a body of surface water that is substantially changed in character as a result of physical alteration by human activity.

An artificial water body (AWB) is a surface water body created by human activity.

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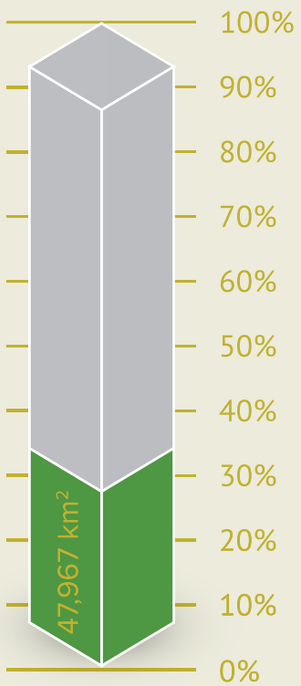
THE DOMINANT LAND USES IN THE TISZA RIVER BASIN ARE AGRICULTURE, FORESTRY, PASTURES (GRASSLAND), NATURE RESERVES AND URBANIZED AREAS

47,967 km2 of the Tisza River Basin is covered by forests, that means 33.55 % forestation. Forests have been devastated in the past and are overused in many places today, too.
Of the total area of forests, most of them belong to economical forests with a predominant production function and a smaller part to protective forests.



The lower parts and floodplains are mostly used for intensive agriculture. Wetlands and traditional grazing areas still exist, but their extent is minor. Intensive agriculture has been made possible after many rivers were canalized, and wetlands were drained. The diversity of the flora and fauna was drastically decreased by the disconnection and drainage of floodplains along the Tisza River and its tributaries.

Rapid urbanization within the region is putting additional pressure on the surrounding rural and natural environment, including biodiversity and traditional landscapes.

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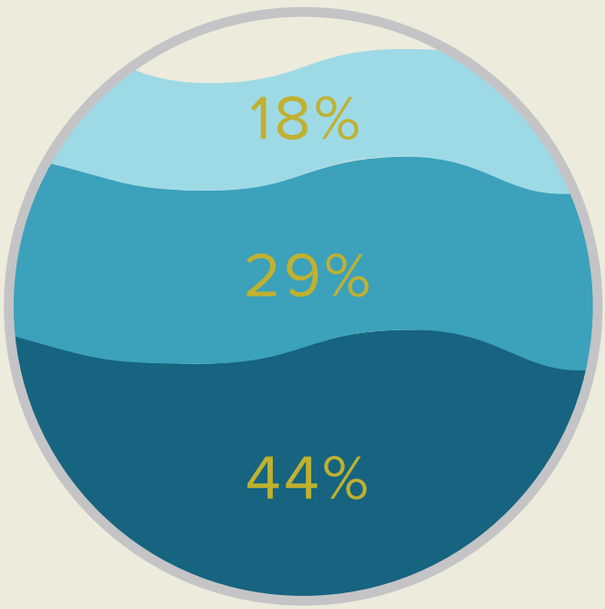
TISZA RIVER'S CONTINUITY



In total 180 barriers were identified in the Tisza River Basin. The dams were built and now operate due to three main demands: water abstractions (44%), flood protection (29%) and hydropower (18%). The number of hydropower stations is 30 with an output of greater than 10 MW. The biggest number of the stations and the biggest capacity is in Romania.

The dams have significant effects on the species and habitats of of Tisza and its tributaries. The riparian habitats change both downstream and upstream of them and many indigenous species leave these river stretches. The migration of aquatic species is blocked at the dams and the natural character of the river together with the services to the society disappear.