Danube Facts and Figures

Ukraine

(March 2007)

General Overview

Three sub-basins of the Danube are partly located in Ukraine – the Tisza, Prut and Siret basins, as well as part of the Danube Delta. Furthermore, 2.7 million people live in the Ukrainian part of the Danube Basin, which is 3.3% of the total Danube Basin District.

Ukraine has been a Signatory State to the Danube River Protection Convention since 1994. The Convention was ratified by the Ukrainian Parliament in 2002 and is now a law.

Topography

The largest part of the Tisza Basin is located in the Ukrainian Carpathian Mountains, which are middle-height mountains of 1,000 to 1,200 metres above sea level – the highest peaks reach 2,000 metres. The main mountain ranges are located longitudinally from north-west to south-east and divided by transverse river valleys.

One third of the Tisza Basin is located in the Zakarpattya Lowland, which forms part of the Great Hungarian Plain and the Pannonian Plain, with dominating heights of 120-180 metres above sea-level. Like the Tisza Basin, the Prut and Siret Basins are located mainly in the Ukrainian Carpathians, but in the eastern hills. The source of the Prut is in the Chernogora Mountains at around 1,600 metres above sea-level. The total area of the sub-basins is 30,520km^2, which makes up only 3.8% of the total Danube Basin area and 5.4% of the Ukrainian territory.

The Danube itself comes through the lower part of Ukraine; its length in the mouth is 174km. The Danube is divided here into three braches, one of which – the 112km Kiliya branch – forms the border between Ukraine and Romania.

Precipitation, climate and water flow

The climate of the Tisza, Prut and Siret Basins in the Ukrainian Carpathians is reasonably continental. The region enjoys mild winters with thaws, a long, though unstable spring, a mild summer and warm autumn. The annual precipitation is between 1,750mm in the mountains and 700mm in the lowlands.

The annual runoff of the Tisza in Ukraine is 7.83 billion m^3. The highest discharge ever measured at the Upper Tisza was 4,190m^3/s during the flood on March 6,

2001. The highest discharges occur in December and February through April, and the lowest from August to October.

The hydrological regime of the Prut River is generally similar to that of the Tisza. The average water discharge at the Ukraine-Moldova border is 75m^3/s. The highest discharges occur April to June, the lowest from August to October.

The Danube hydrological regime in the Kiliya Delta is characterised by spring and summer floods and autumn to winter low water. The average water discharge at the mouth of the Danube River is approximately 6,400m^3/s. Average precipitation in the delta is between 350mm and 400mm, and the amount of evaporation is between 800-900mm.

Land use and settlements

The Danube Delta is one of the largest wetland areas in Europe, and a major part of the delta is the Biosphere Reserve. Part of the catchment of the Delta is also used to cultivate corn. The largest part of the Tisza and Prut Basins – 50-60 % - is covered by forests; the rest of the land is used for agriculture, human settlements and infrastructure.

The largest city in the Tisza Basin is Uzhgorod (population 120,000), the largest in the Prut Basin is Chernivtsi (population 240,000) and the largest in the Danube Delta is Izmail (population 85,000).

Selected natural highlights on rivers and lakes

The Danube Biosphere Nature Reserve of the National Academy of Sciences of Ukraine is located in the Danube Delta at the Kiliya branch of the Danube, with a total area of approximately 46,000ha. Protected areas include islands with attached areas of water and wetlands. More than 250 bird species nest in the reserve, and the total number of animal species is more than 5,000. Pink pelicans, geese and brand geese can be found in the delta, as well as dolphins, seal-monks, true otters and minks.

Several Ramsar sites are located in the Ukrainian part of the Danube Basin – Synevir Lake in the Tisza Sub-Basin and Kugurluy Lake, Kartal Lake and the Kiliya Mouth in the Danube Delta.

Human uses of water and water bodies

- Flood and torrent management, landslides

The Tisza and Prut in Ukraine are mountain rivers, and floods are therefore common. Landslides are typical phenomena for mountains, but are generally localised. The biggest floods on the Tisza occurred in November 1998 and March 2001, when the highest water levels and discharges were recorded. Both floods significantly damaged property and infrastructure and caused fatalities. Much has

been done since then to improve flood prediction – automatic gauging stations were installed – and a significant amount of money was spent for the construction of flood defence works.

- Use of hydroelectric power

There are several hydropower stations in the Tisza Basin, with a total capacity of 31,600kWt. Furthermore, there is a programme to develop a small hydropower sector on Tisza Basin Rivers, with the timetable of implementation still to be defined.

- Navigation

While the rivers of the Tisza and Prut Basins cannot be used for navigation, Ukraine is united with Europe by the Danube River. The largest ports on the Danube in Ukraine are Izmail, Reni and Ust-Danube.

In 1995, however, Ukraine was no longer a Danube transport country, as the Prorva Canal – constructed before WWII – became unusable. Since then, the only navigable waterway in Ukraine from the Danube to the Black Sea is a conjunction canal near the Ochakiv mouth, through which only small capacity ships may pass. The majority of ships must use the Romanian Sulina Canal.

The potential shipping capacity on the Ukrainian part of the Danube is 26.95 million tonnes, however only a quarter of its capacity is used. Over the past ten years the local economy has suffered a sharp decline as cargo shipped through Ukrainian ports has dropped rapidly.

Currently, Ukraine is working to make the existing natural branches of the Danube River (the Bystroe and Kiliya), suitable for navigation. The planned length of the canal is 162.6km at a cost of €30 million. These activities, however, are under debate in Ukraine. Discussion on the construction of the Bystroe canal centres on the canal's economic feasibility – due to costs to keep the canal free of mud accumulation – and the environmental impact of construction – as the dredging work in the bar area of the shallow sea waters takes place close to the buffer zone of the Danube Biosphere Reserve.

- Rivers as receiving waters for effluents

Rivers in Ukraine are used as receiving waters for both urban and industrial wastewaters.

- Use of groundwater and surface water bodies: drinking water

The Tisza River Basin in Ukraine is rich in groundwater bodies, both alluvial and karstic waters. More than 60% of drinking water for the centralised water supply system comes from groundwater sources. Rural areas use groundwater from wells for drinking and household needs.

In the Tisza Basin there are also several water catchments at tributaries for drinking needs, including Uzhgorod, Chop and Tyachiv. Approximately 40% of the total volume of drinking water comes from surface sources.

Pressures and impacts on surface and groundwater bodies

Data is currently unavailable.

Web-links

Ministry of Environmental protection of Ukraine www.menr.gov.ua
State Water Committee of Ukraine www.scwm.gov.ua/
State Department of Environmental protection in Chernivtsi Oblast www.ecology.cv.ua/
Ministry of Transport and Connections of Ukraine www.mtu.gov.ua/
EU project 'Flood Risk Assessment and Management in Zakarpatska oblast" www.povini.uz.ua
Ports of Ukraine www.blackseatrans.com/