

JOINTISZA

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

Project co-funded by the European Union (ERDF, IPA funds)



STATUS OF THE TISZA RIVER

The Tisza River Basin drains an area of 156,869 km². Five countries share this, the largest sub-basin of the Danube River Basin. More than 12 million people live in the Tisza River Basin. The two main types of land use are agriculture and forestry.

The Tisza River Basin has a diverse natural state both in the mountain and lowland habitats. Some typical species are:



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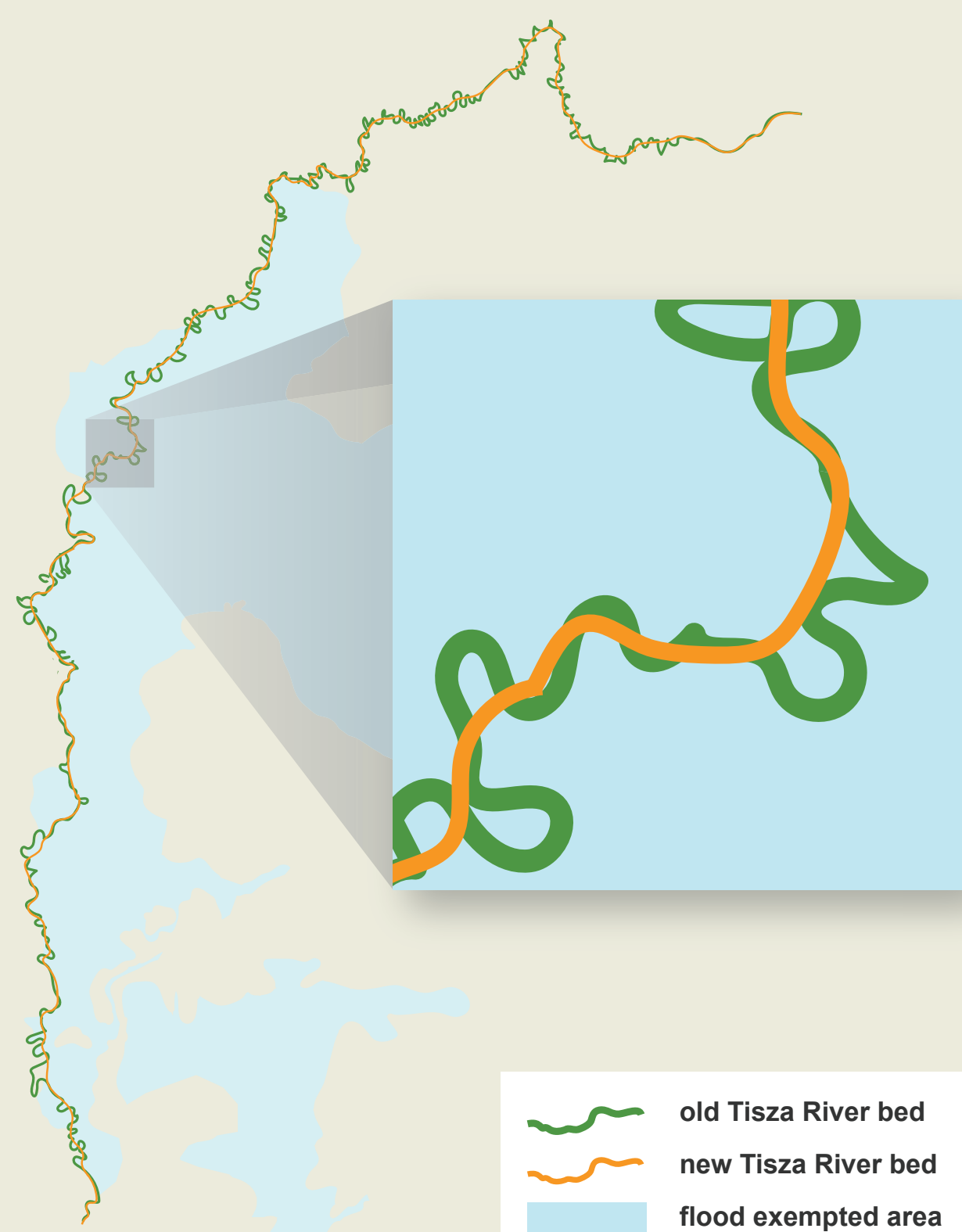
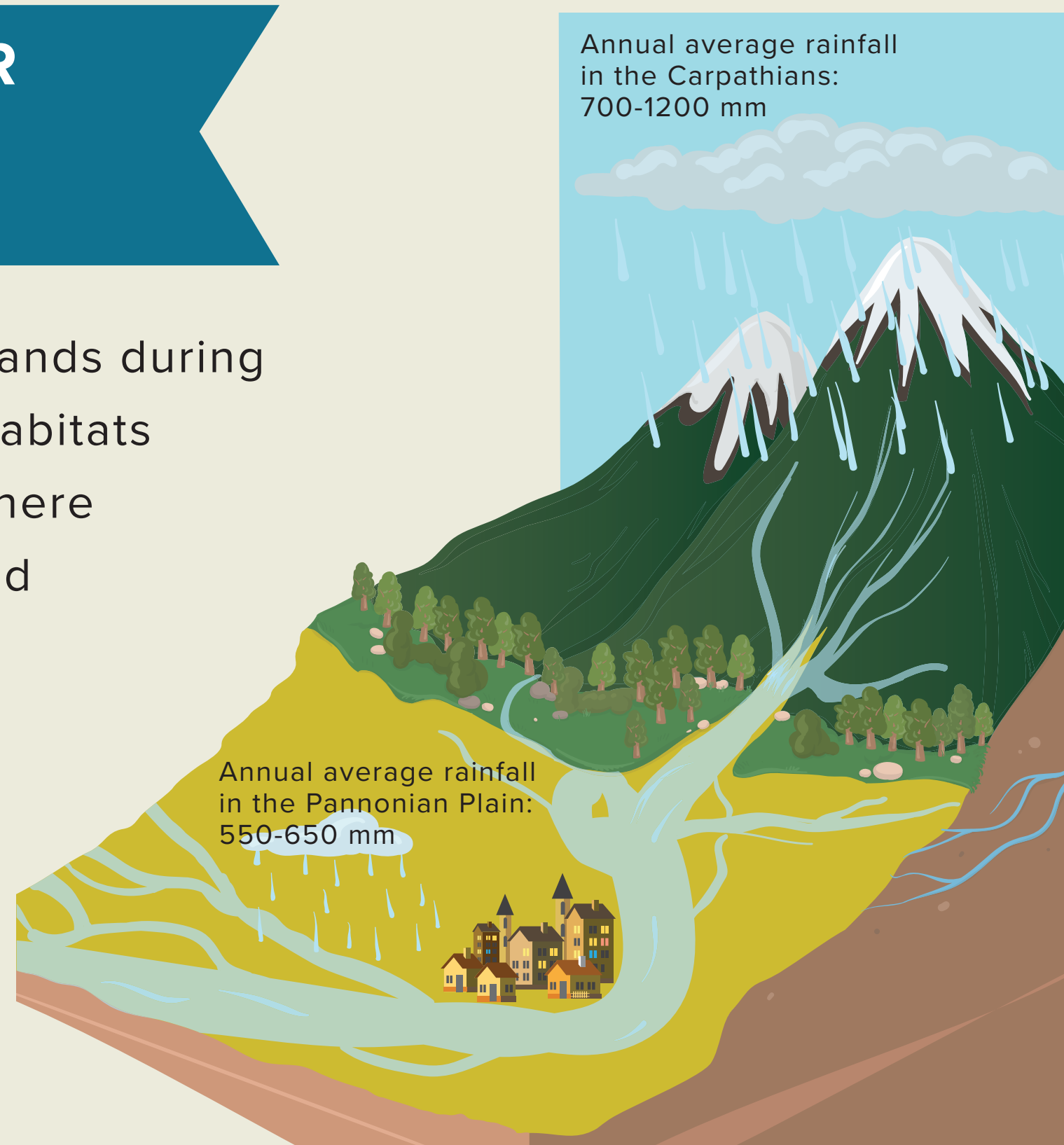
THE TISZA RIVER DELIVERS WATER TO THE GREAT HUNGARIAN PLAIN WHICH LACKS WATER

There is usually lack of precipitation in the lowlands during the vegetation period: agriculture and natural habitats would need more. Though, in the Carpathians there is surplus rainfall. This extra water quantity is led by Tisza from the wet parts to the dry ones.

AFFECTING AND THREATENING FACTORS ON THE RIVER BASIN'S STATUS

RIVER REGULATION

During the river regulation in the 19th century the original length of the Tisza River was shortened by approximately 30%, from 1400 km to 966 km.



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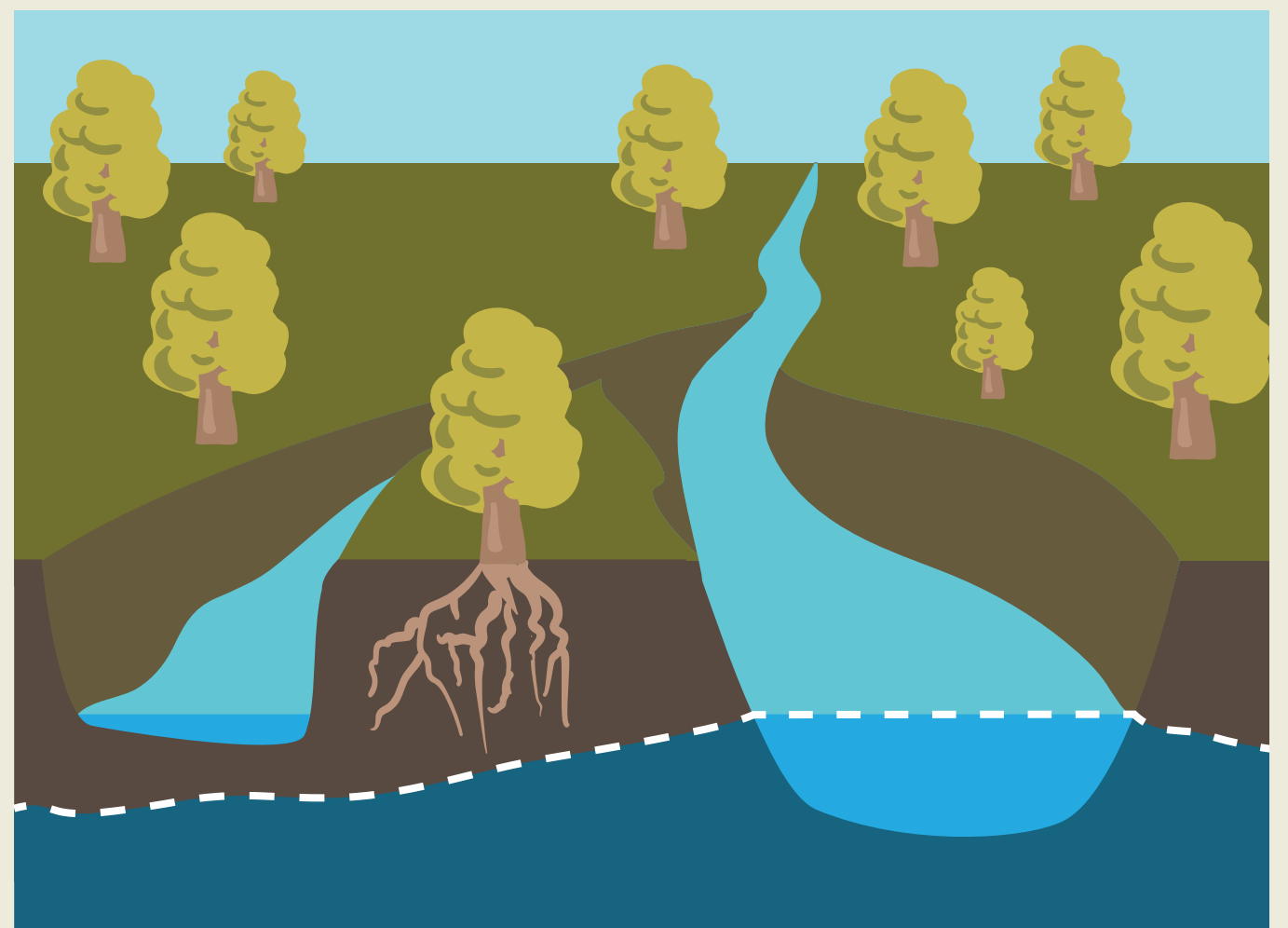
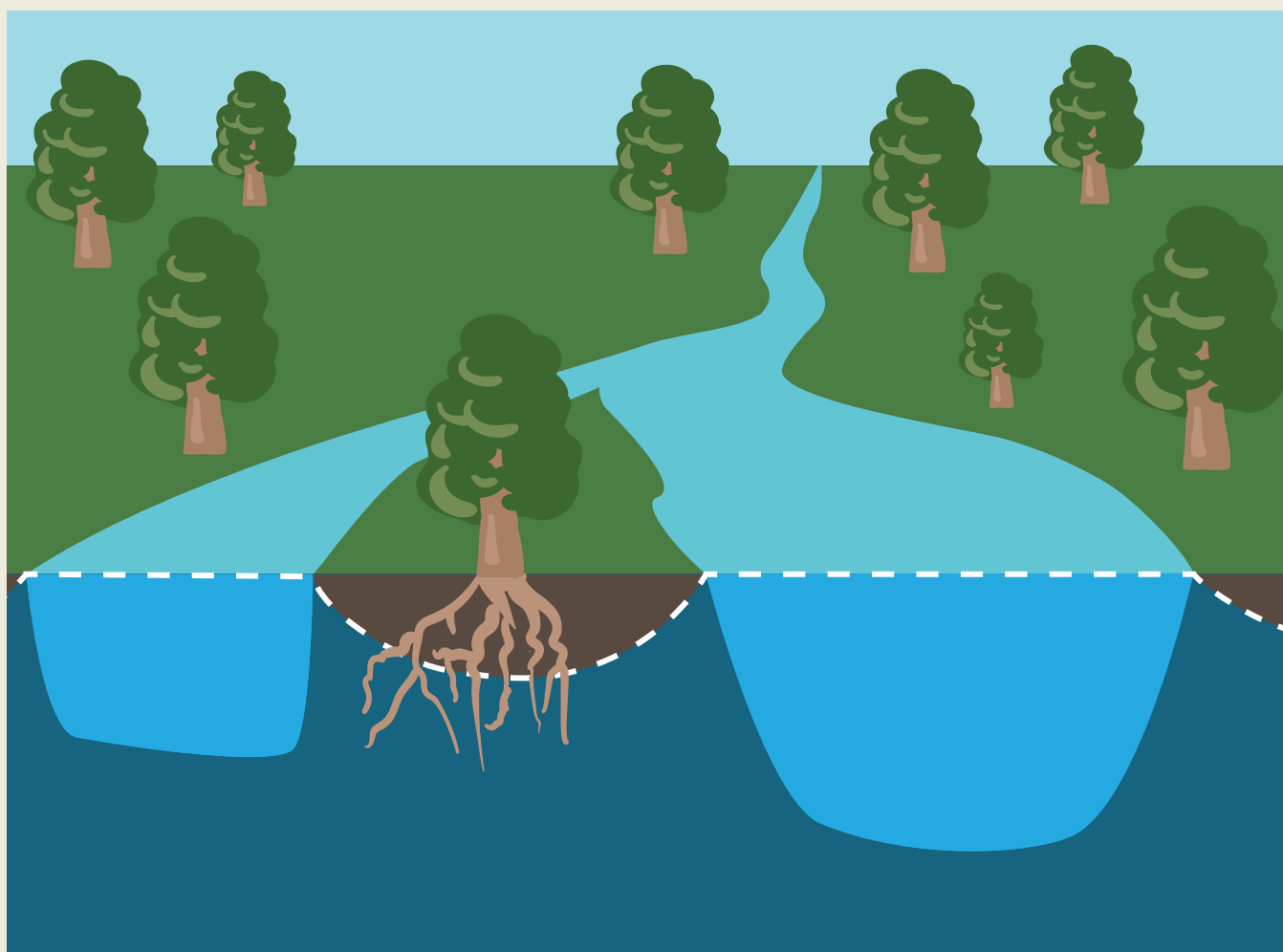
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RIVERBED DEGRADATION

The regulated river has narrow space to flow, in which the floodplain is constantly elevating and the river bed is deepening.



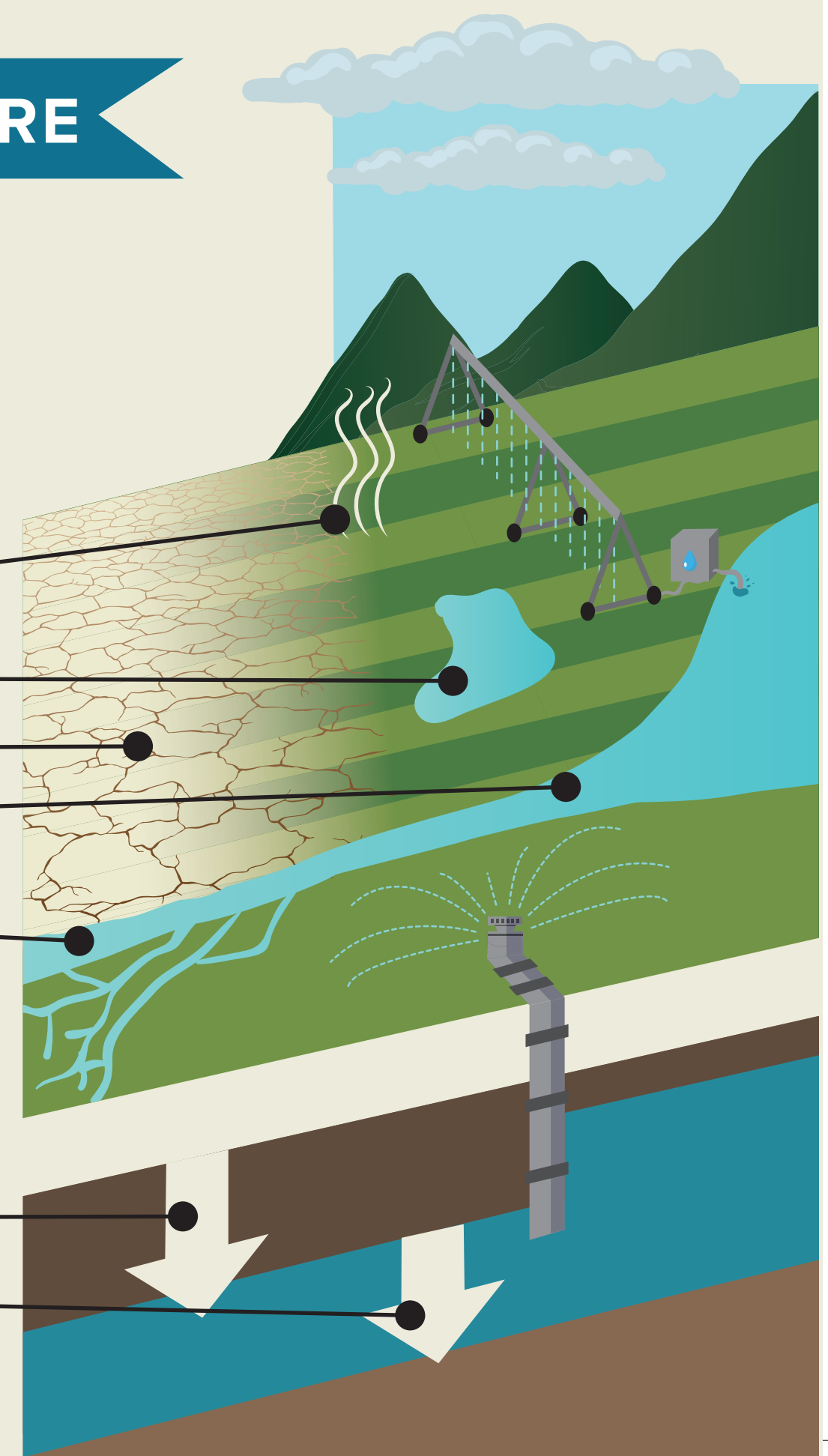
IRRIGATION DUE TO INTENSIVE AGRICULTURE

Due to water scarcity, intensive agriculture has increasing demands for irrigation. However it has significant hydrological, environmental, social and economic impacts.

- increased evapo(transpi)ration in the irrigated area,
- waterlogging,
- soil salination,
- reduction in downstream river flow,
- flow increased in the irrigated area,
- ecological damage.

In case irrigation is done by extracting groundwater

- the soil may subside,
- the level of the water table may descend.



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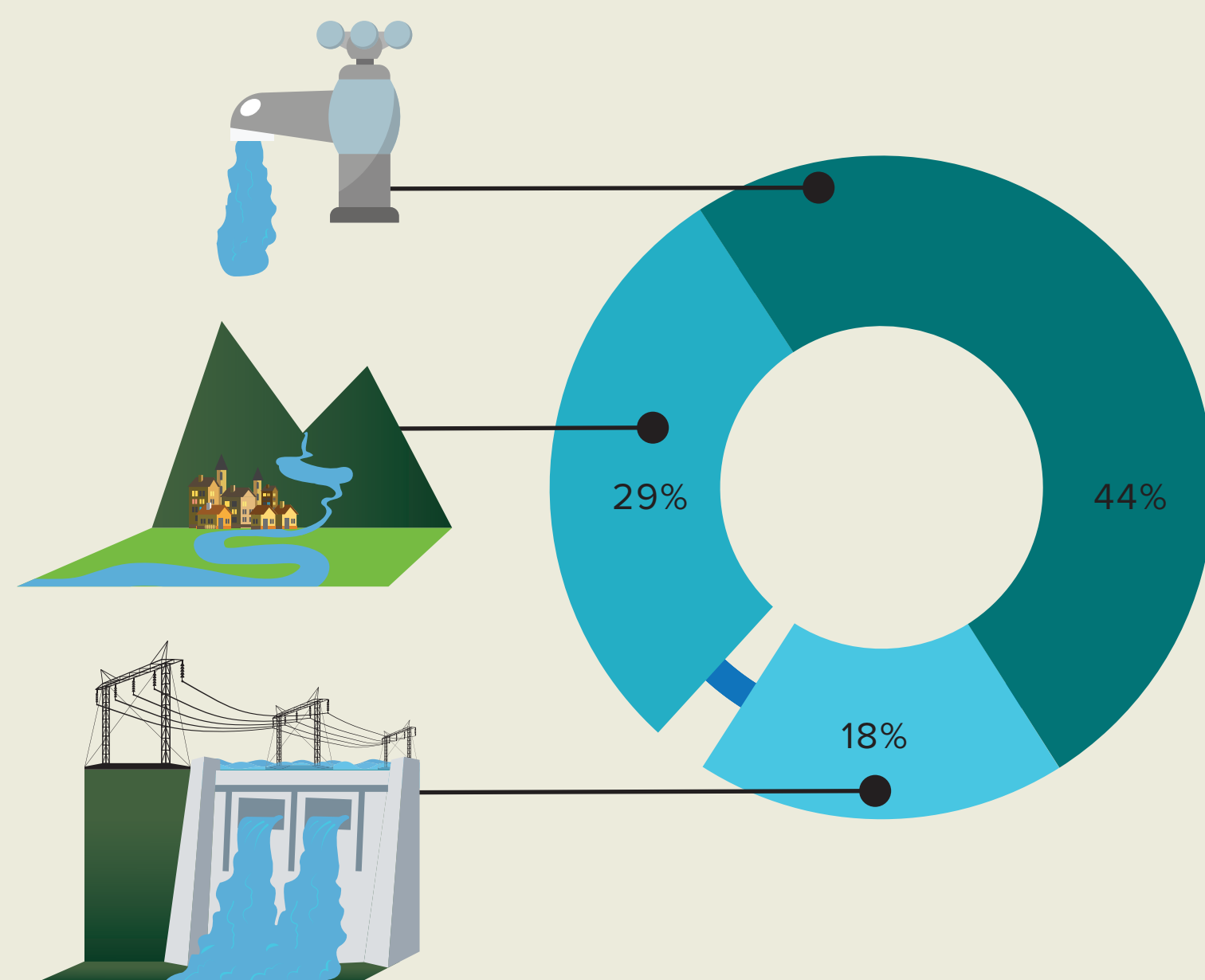
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BARRIERS AND DAMS

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%).



Dams have significant effects on the species and habitats of Tisza and its tributaries. 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.



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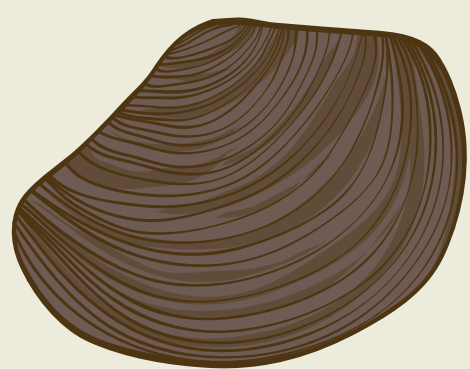
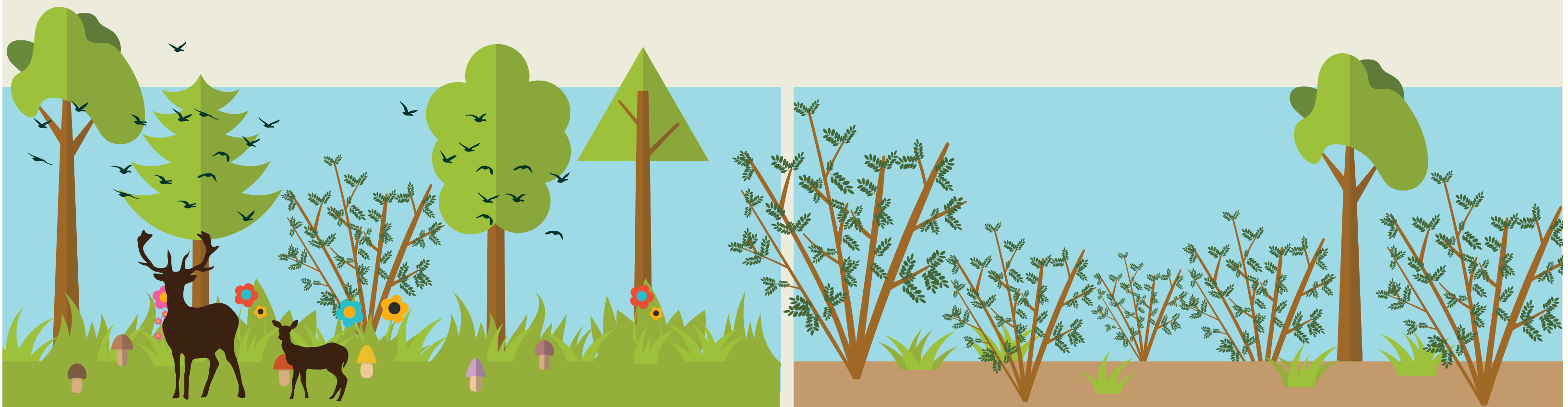
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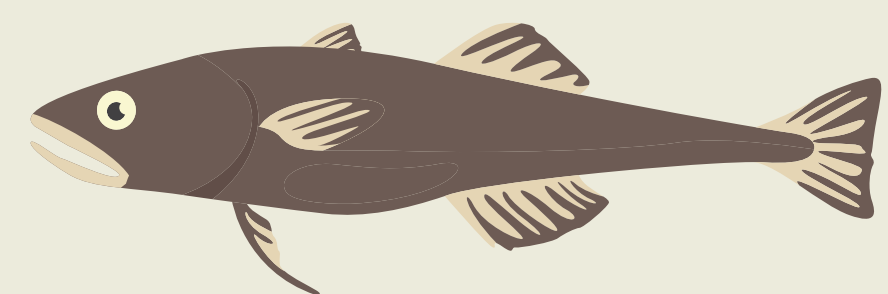


INVASIVE ALIEN SPECIES

Invasive alien species rapidly displace native species that means a severe threat to wildlife in the Tisza floodplain. The main causes of the spread of invasive species are the reduction or degradation of natural habitats and habitat drying due to climate change.



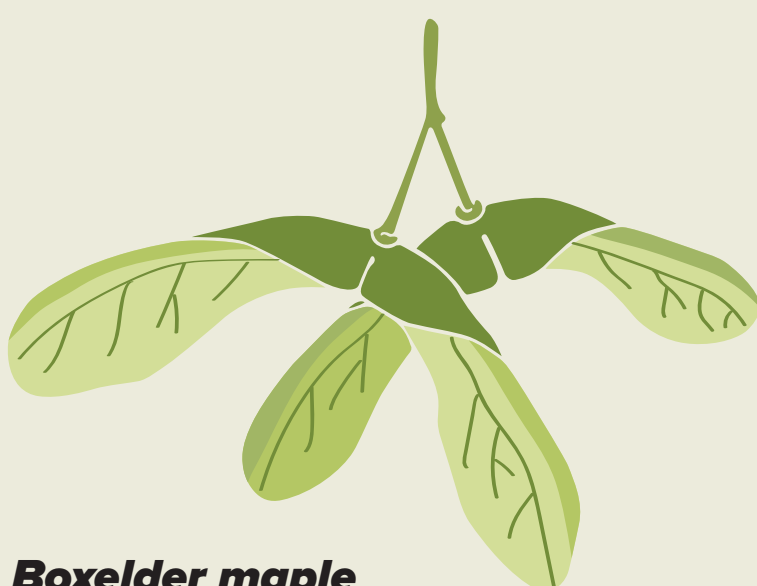
Chinese pond mussel



Amur sleeper



Great cormorant



Boxelder maple



False indigo bush

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POLLUTION

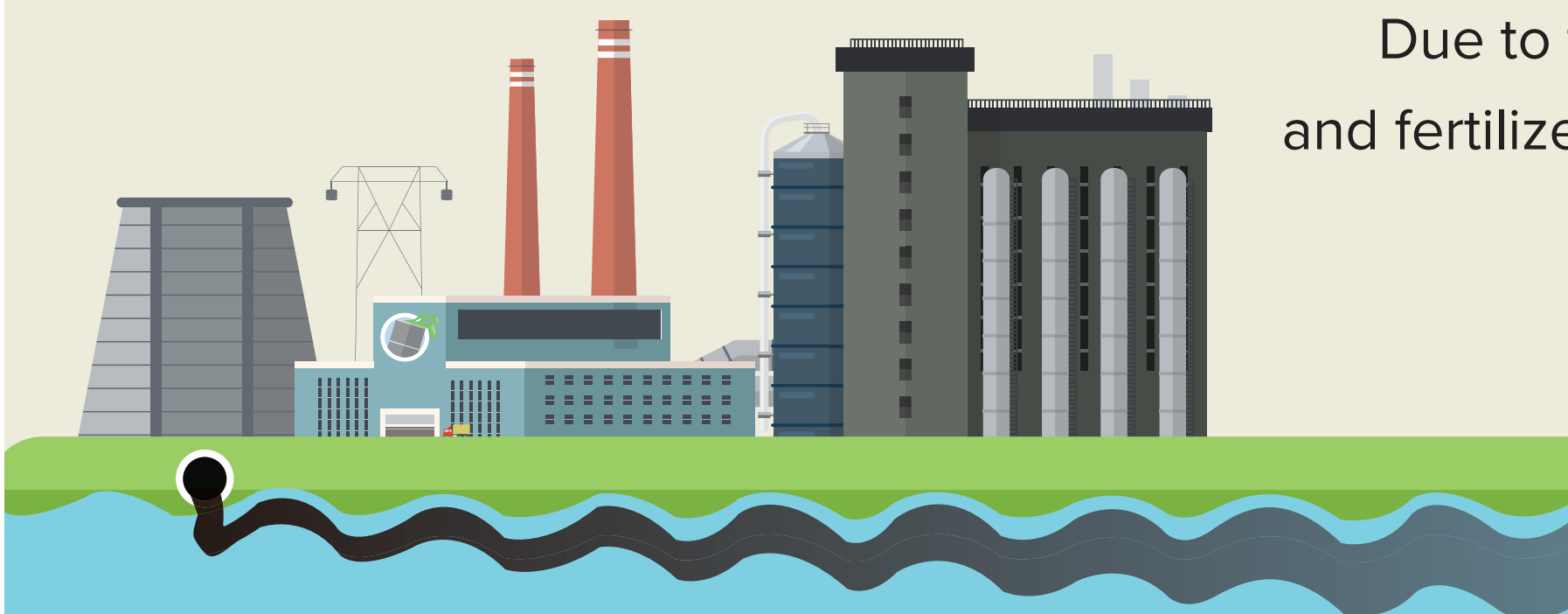
Four significant water management issues can directly or indirectly affect the status of surface water:



Household waste water flows into the river uncleaned



Due to fertilization, significant amount of chemicals and fertilizer enter the groundwater and surface waters



Pollutants from industrial activities pose a threat to the river



The flora and fauna deteriorates along regulated rivers, the area becomes unsuitable for leisure time

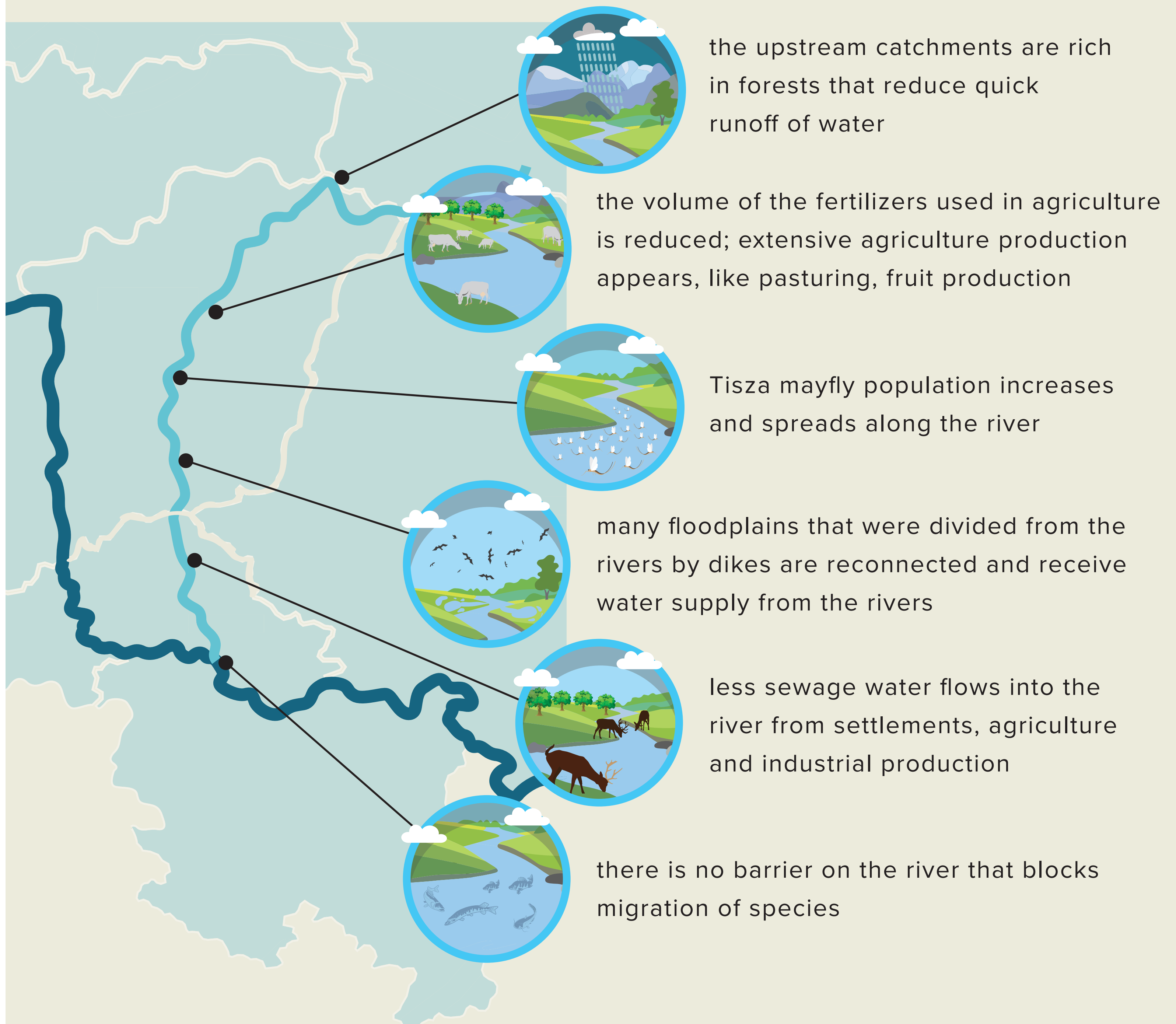
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POSSIBLE SOLUTIONS BASED ON MANAGEMENT VISIONS AND OBJECTIVES OF TISZA COUNTRIES



the upstream catchments are rich in forests that reduce quick runoff of water

the volume of the fertilizers used in agriculture is reduced; extensive agriculture production appears, like pasturing, fruit production

Tisza mayfly population increases and spreads along the river

many floodplains that were divided from the rivers by dikes are reconnected and receive water supply from the rivers

less sewage water flows into the river from settlements, agriculture and industrial production

there is no barrier on the river that blocks migration of species