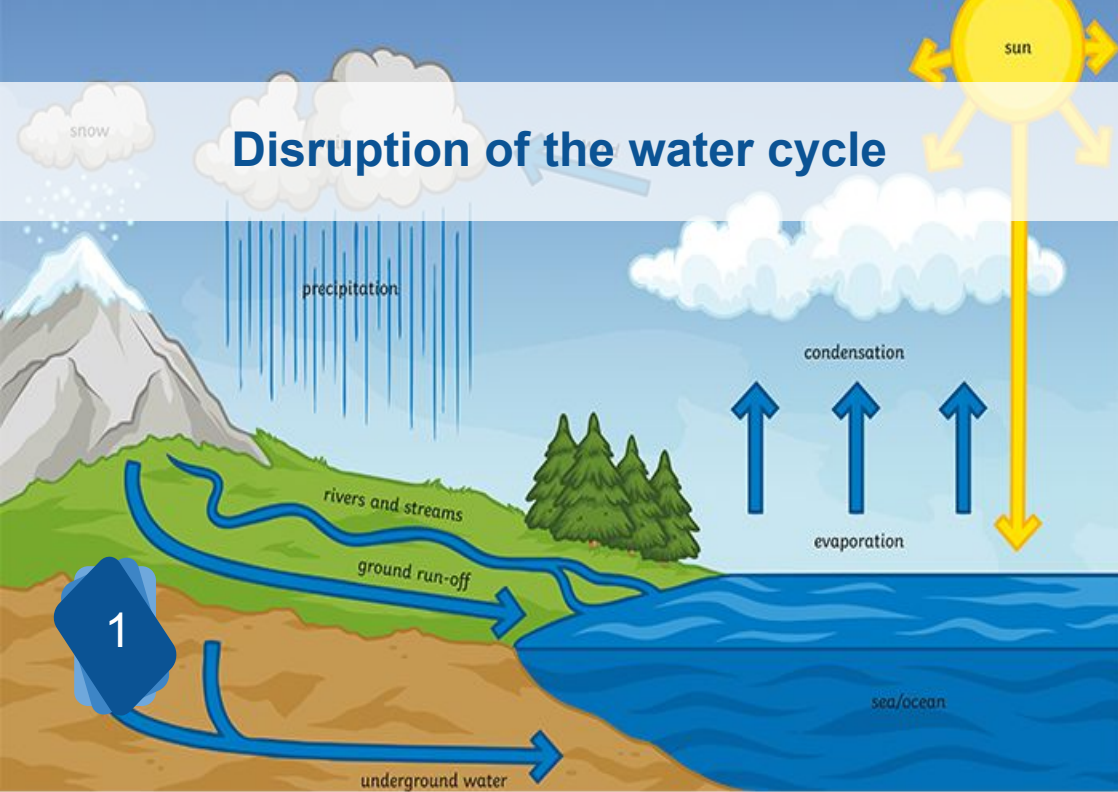
Floods

5

Disruption of the water cycle can lead to more water or less water. More water can lead to inland flooding. With urbanisation or if the soil has been hardened by a drought, it is worse because the water runs off without infiltrating.

Disruption of the water cycle



1

Evaporation from the ocean surface increases if the water and air warm up. This makes more clouds which then make rain. But if evaporation takes place on land, it dries out the soil.

River flow variability

3

High variability in rainfall leads to high variability in river flows, as a large proportion of the flows come directly from rainfall. High and low water flows will be more frequent, increasing the risks of floods and soil dryness.

Soil drying

4

When water flows are too low, the soil dries out. In addition to being bad for biodiversity, this makes floods more intense because dry soil absorbs much less water.

Human and material damage

Floods can cause spectacular damage to bridges, buildings and houses, but they also endanger human lives. To reduce this damage, many efforts are made : hydraulic simulations, construction of protective structures such as dykes.

Hydraulic structures

7

Hydraulic structures have an influence on the functioning of the watercourse. For example, dams have flood control capacity because operators can choose how much flow it lets through, but there is a risk if the dam breaks.

Rainfall variability

2

Variations in precipitation due to global warming are the cause of many problems: lower agricultural yields, drying out of soils, significant fluctuations in river flows. These variations force people to adapt to new natural conditions

Power of a river

8

Each river has a specific power which depends on parameters in a given section: slope, flow rate, etc. This power is naturally dissipated by friction on the bed and by transporting sediments. Problems can arise if this power is no longer dissipated correctly, for example because of dams.

Decline in agricultural yields

9

Agricultural production is affected by natural disasters, including floods. Flooding of fields can destroy planted crops and sometimes even uproot part of the fertile land on the bank. They can also be an advantage as in the case of the Nile Delta.

Famine

Famines can occur as a result of reduced agricultural yields. Floods can also cut off access to regions and stop vital trade with the outside world in these hard-to-reach areas.

Influence of harmful vegetation

The evolution of vegetation can have harmful effects: dense vegetation increases the roughness and thus the water level. In addition, some invasive species can crowd out other species, which can lead to bank erosion.

Melting ice

The melting of the glaciers leads to variable flows from year to year depending on the winter and summer temperatures. The melting of the glaciers also leads to the creation of lakes on the glacier. These reservoirs fill up until a breach is formed, at which point a very dangerous flash flood occurs.