

The water cycle

The total quantity of water on Earth [both freshwater and saltwater] is constant. It is mostly made up of salt water. Freshwater, comprising 3% of the total, circulates between different compartments (the atmosphere, the soil and the oceans), assuming different forms (clouds, rain, ice and snow) as it moves around the cycle. Life on Earth depends on this cycle and on its continued balance.

Annual global flux in thousands of km³, where 1 km³ = 1 000 billion litres.

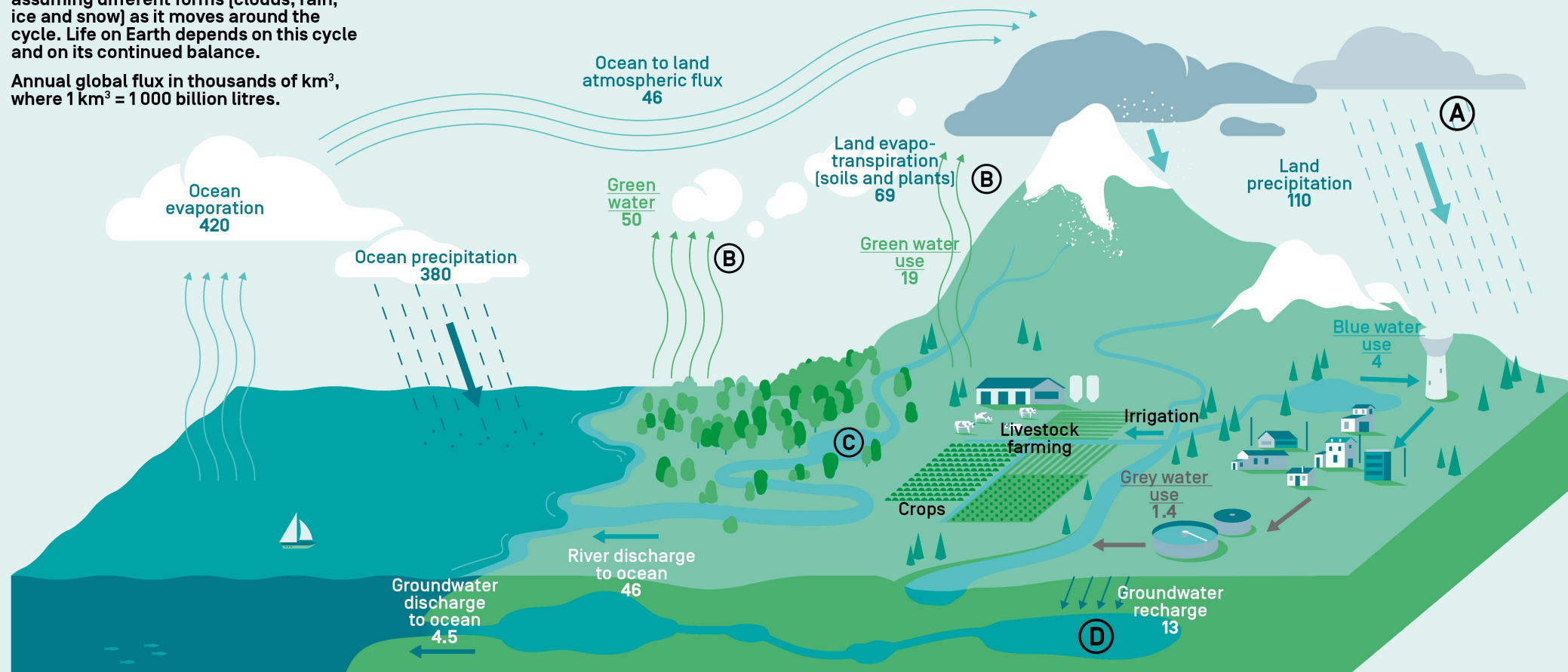
Margins of error [10-50%] not shown, margins are greatest for groundwater recharge and greywater use.

Extreme variations within and between years not included.
From Abbott B.W. et al (2019). Nature Geoscience 12, 533-540.

≈ 1.4 billion km³
Total volume of water on the planet

≈ 35 million km³
Total volume of fresh water on the planet

≈ 24 000 km³
Total volume of fresh water used by humans each year (approx. 6 times the volume of the English Channel)



FLUX
Rainwater distribution
More than half of annual precipitation ① enters soils and is taken up by plants (crops, forests and other natural areas), before mostly being evapotranspired ②. This is green water.

The rest of the rainwater enters water-courses ③, lakes and

groundwater ④. This is blue water.

Human global usage of fresh water
Green water: used for crops and livestock, most is then evapotranspired.

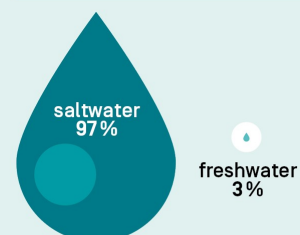
Blue water: used for agriculture (irrigation), industry, energy production and drinking water.

Grey water: domestic and industrial wastewater.

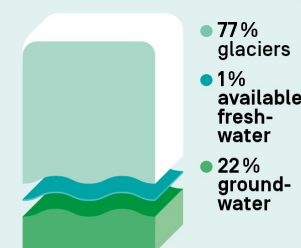
ACTIONS
Avoid freshwater losses to the sea
→ Water storage (reservoirs).
→ Soil water storage: encourage infiltration, reduce erosion, enrich soils with organic matter (cover crops,

livestock farming), agricultural soil conservation practices.
→ Green infrastructure to reduce run-off and encourage storage within the landscape: wetlands, hedges, green buffer strips, ditches.
→ Re-use of wastewater following treatment.

WATER ON EARTH



FRESHWATER



AVAILABLE FRESHWATER

