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Sustainable use of natural resources: Water

The views

*expressed in this document are purely those of the authors and may not be
regarded as stating an official position of the European Commission*



Key messages

- We are water creatures and cannot survive without it
- We do not take good care of our water
 - We pollute water
 - We use and waste a lot of water and do not leave enough for nature to continue serving us
 - We modify our rivers and lakes
- We need to better manage our water by putting nature as the source of water at the centre





We are all water creatures

Water makes up

- 60% of our body
- 70% of our brain
- 80% of our blood

We cannot survive without it





We are all water creatures

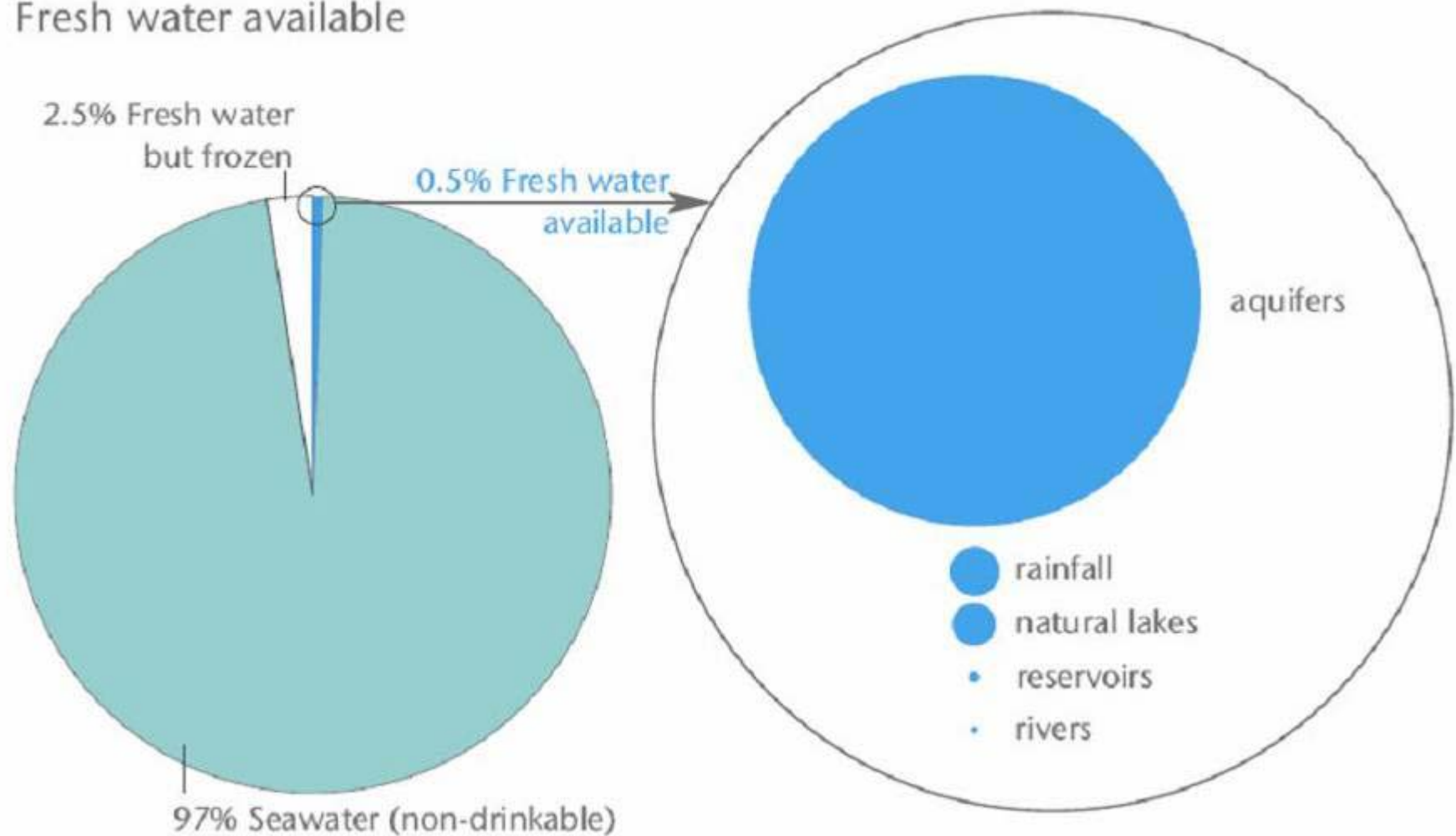
- Water isn't just a matter of physical survival
- It has deep spiritual significance for all major religions
- It is also deeply embedded in our culture whether, music, literature or films





The Global Situation

Fresh water available



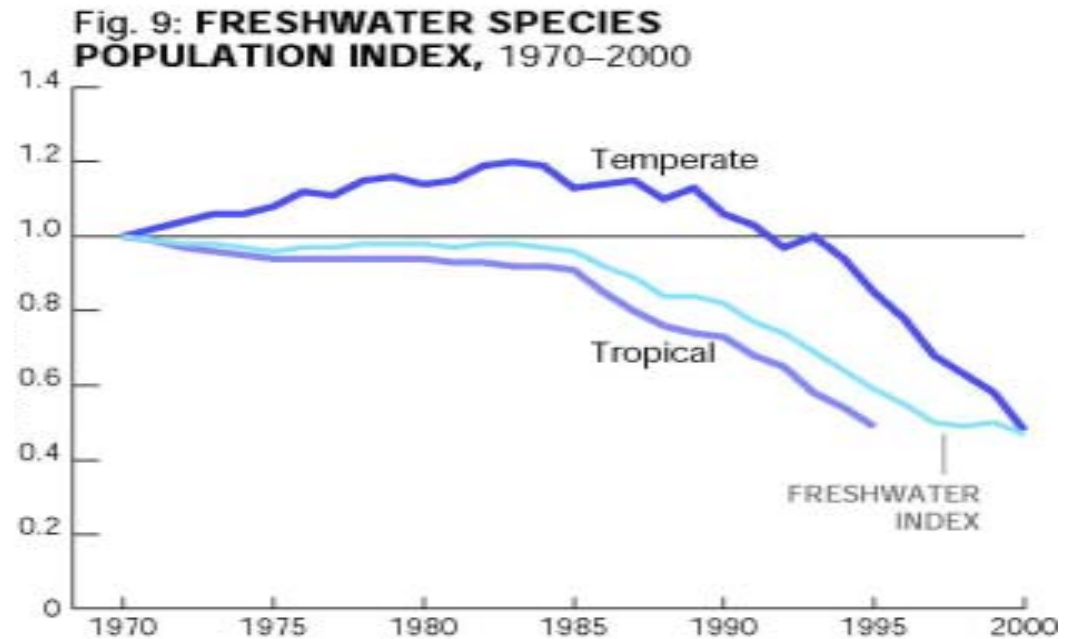
Adapted from "Water facts" by the World Business Council on Sustainable Development





We share it with the others

- Freshwater ecosystems – rivers, lakes, wetlands – account for less than 0,01% of the world's total surface area
- Yet...freshwater habitats are home to 40% of fish species
- Adding amphibians, water birds, reptiles and mammals, makes it home to 1/3 of global vertebrate species
- It is the most imperilled of the biomes



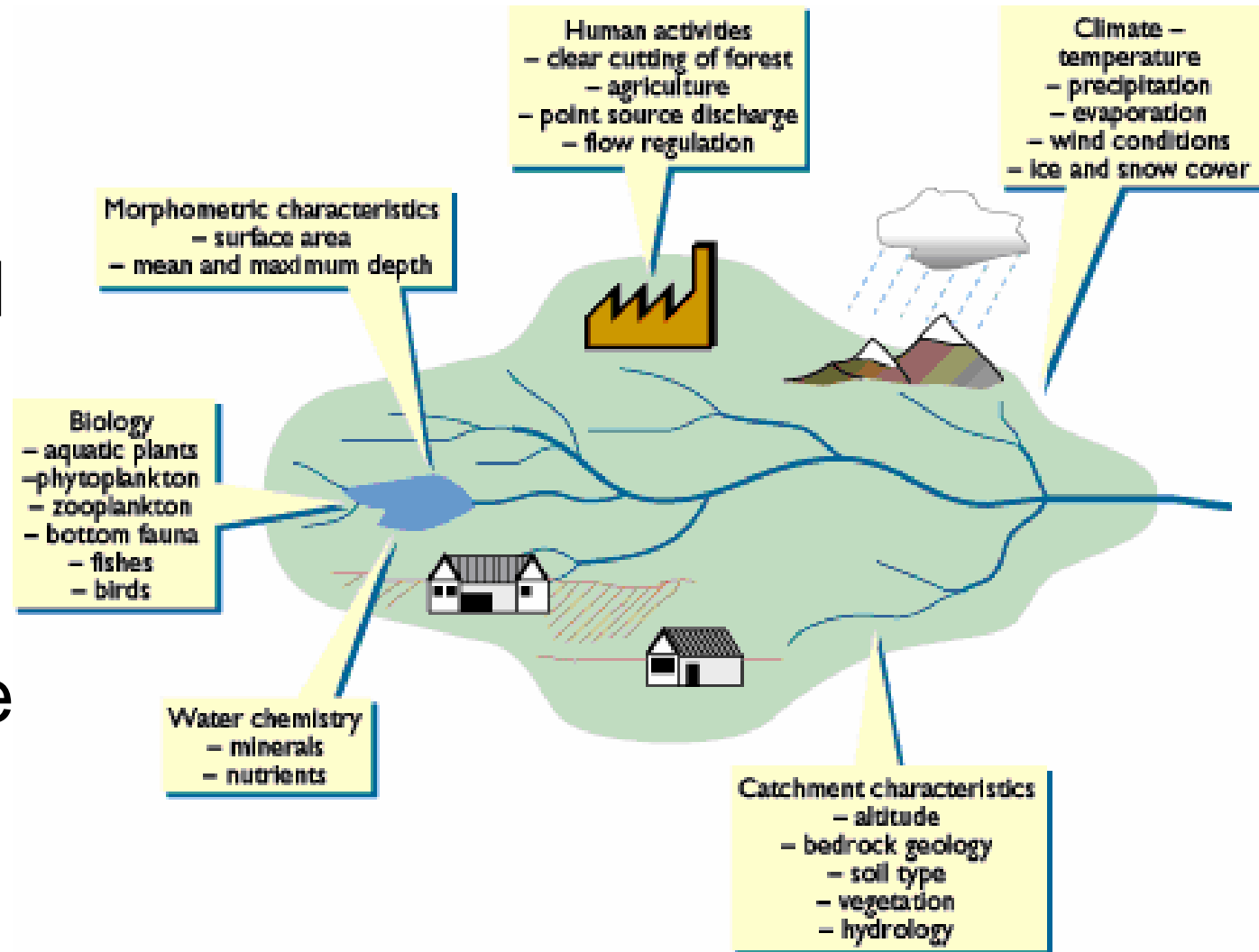
WWF Living Planet Report





The key water challenges in the EU

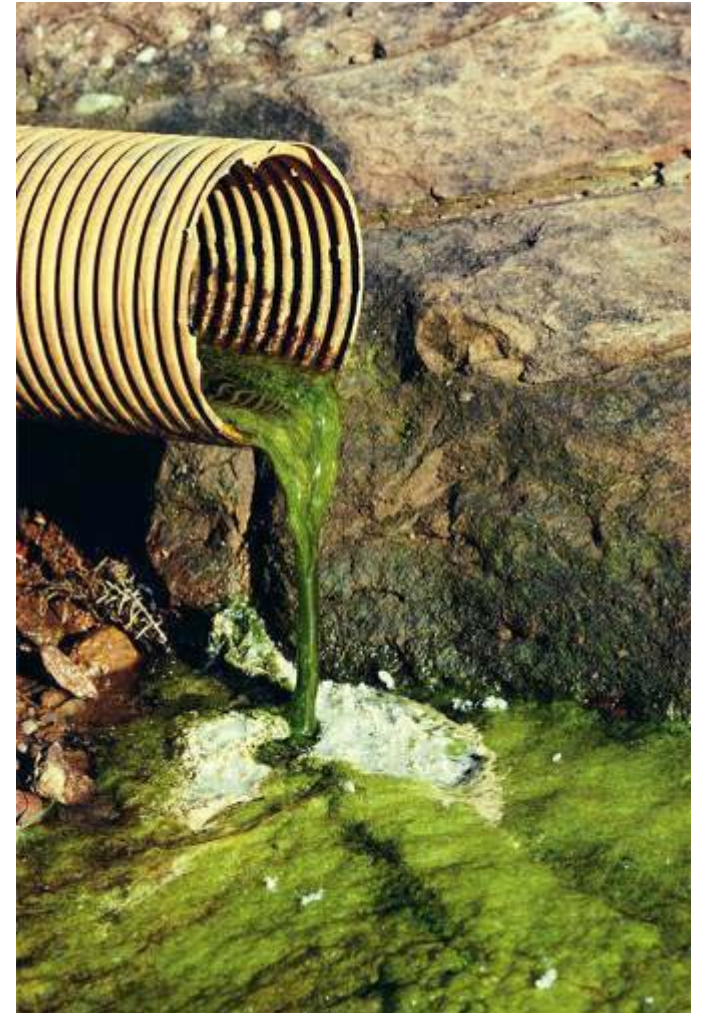
- Water pollution
- Water over-abstraction and wastage
- Water bodies modification
- Climate change as additional pressure





We pollute our water

- Access to clean water is precondition for human health and well-being
- Unpolluted water is essential for ecosystems (e.g. eutrophication)
- Pollution comes from direct point sources (e.g. industrial plant) and diffuse sources (e.g. farmers)
- Some progress over last 30 years especially with point sources
- Known chemicals: nutrients, phosphorus, pesticides, heavy metals, etc
- Emerging concern: Pharmaceuticals and textile and plastic additives





Solutions

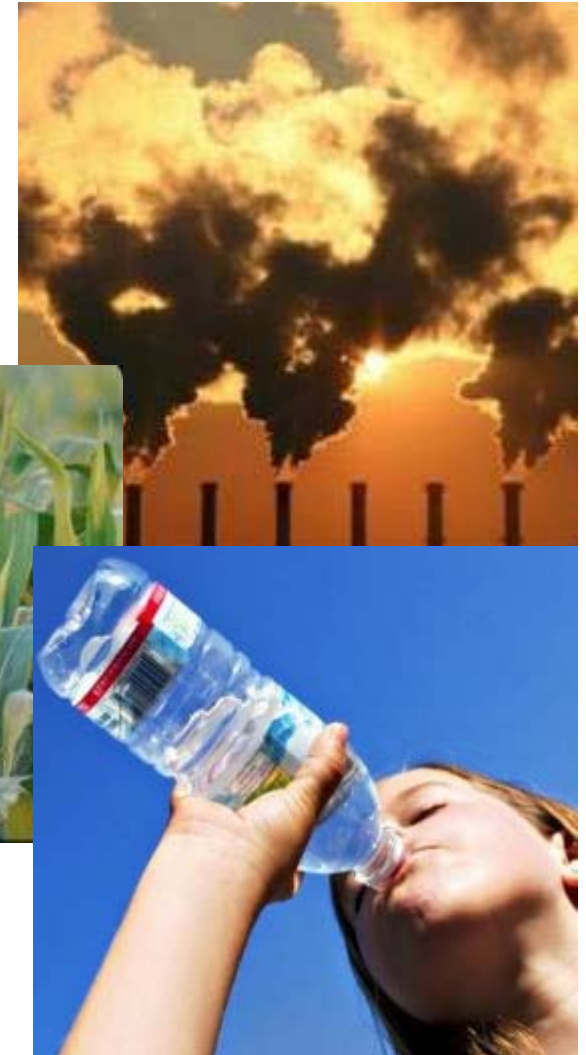
- EU's current response
 - Treat wastewater and control industrial discharges
 - Improve nitrates and pesticides management in farming
 - Control most hazardous chemicals
- Additional response needed
 - Let nature clean water
 - Prevent pollution at source, replace chemicals with safer alternatives
 - Make polluter pay
 - Reduce pesticides and fertilisers used in farming





We use and waste a lot of water

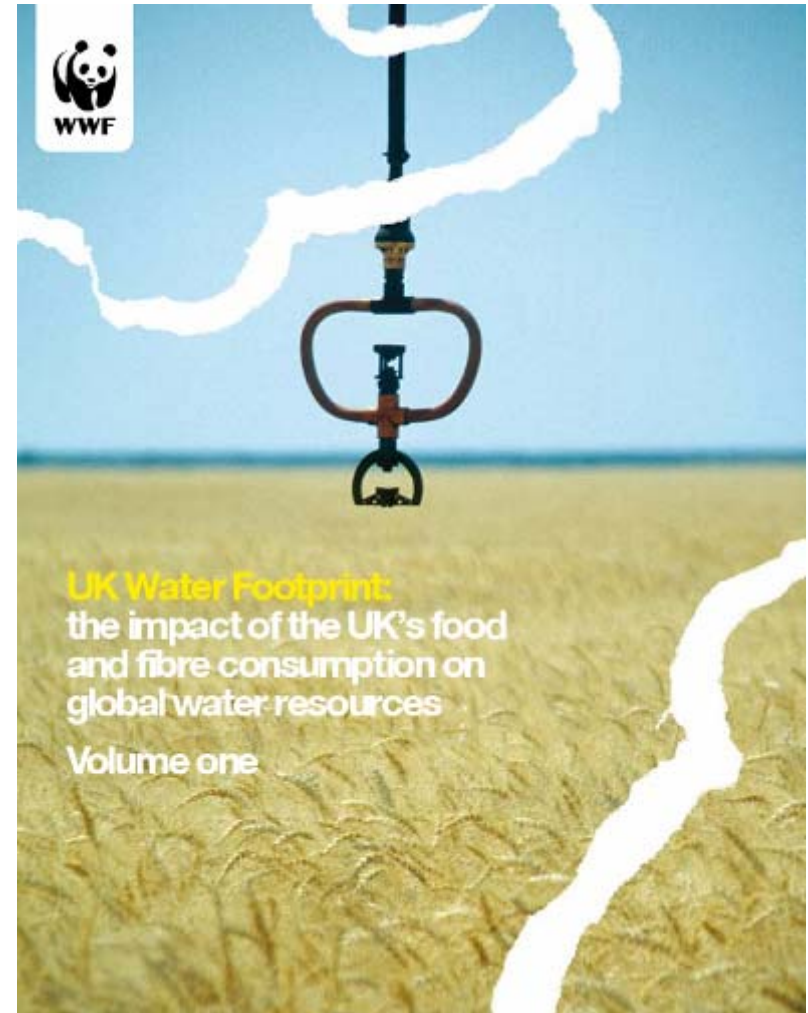
- Water and population are unevenly distributed in the EU
- Water is needed to grow food and clothes, produce energy, transport goods etc
- Demand for water in some places exceeds the amount of water available
- We waste a lot of water – according to European Commission 40% can be saved through technology alone (up to 60% for irrigation)
- Water use by sectors
 - 44 % agriculture (65% in the Med)
 - 40 % industry and energy production
 - 15 % public water supply (EEA 2009)
- EU also dependent on water from others





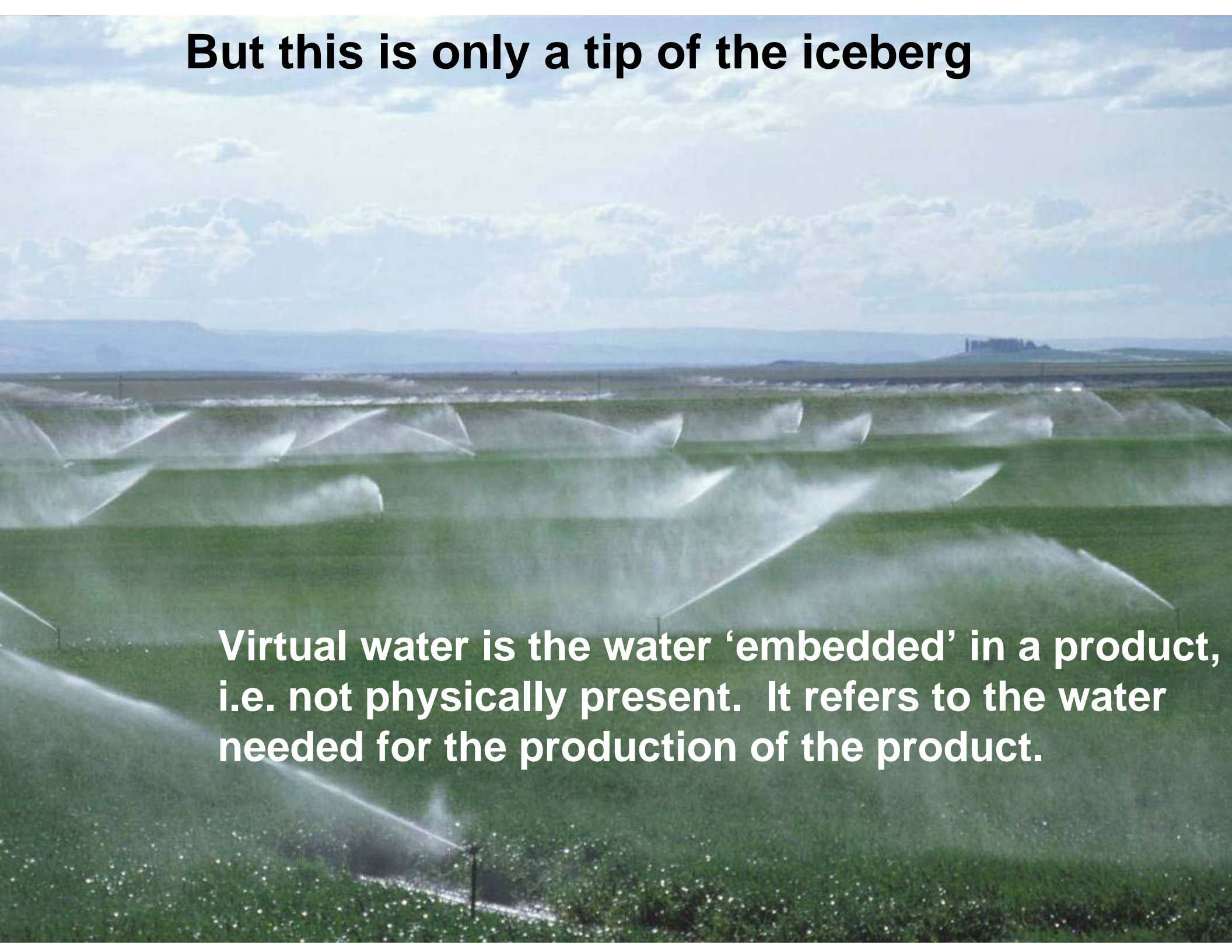
Example: UK Water Footprint

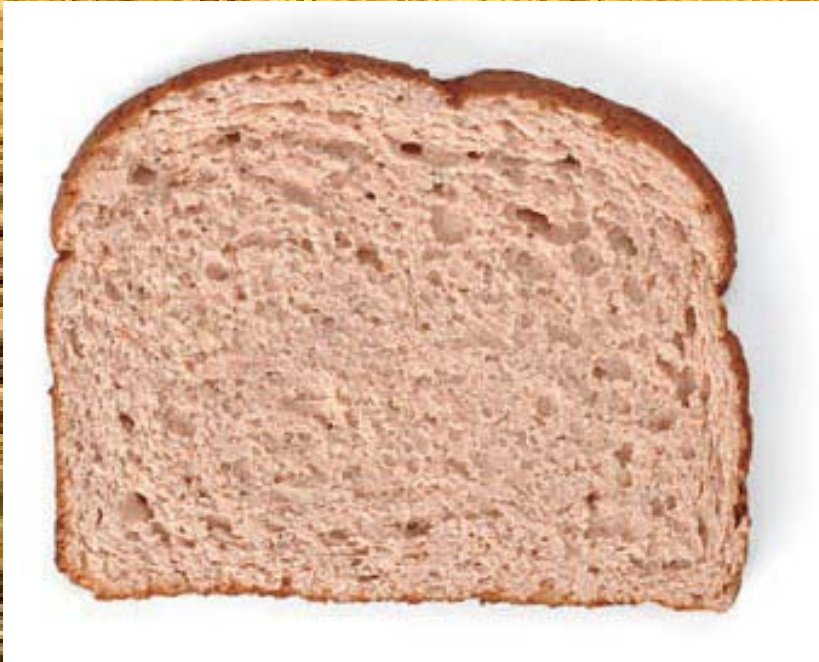
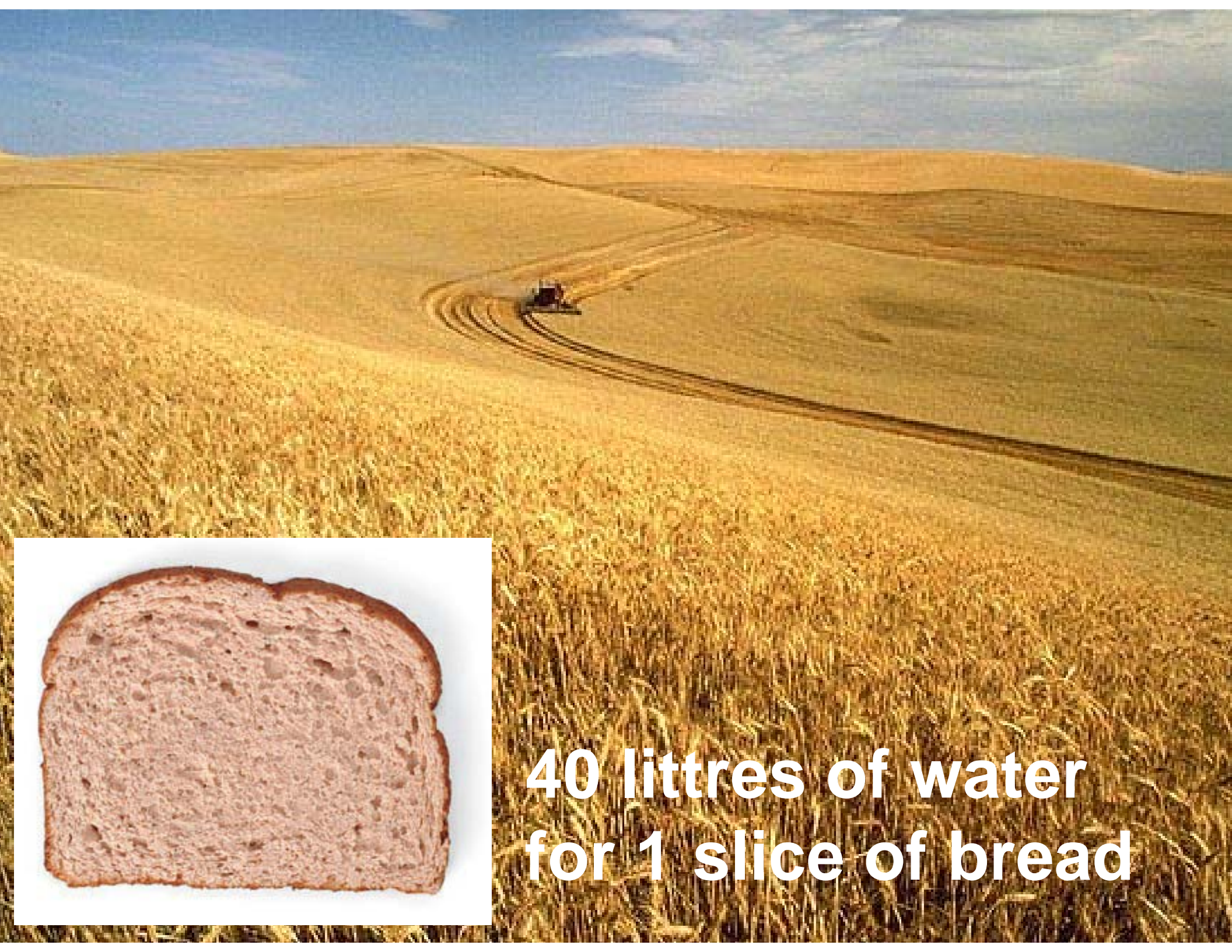
- 1 person in UK uses on average 150 litres a day for drinking washing, cooking etc.



But this is only a tip of the iceberg

Virtual water is the water 'embedded' in a product, i.e. not physically present. It refers to the water needed for the production of the product.

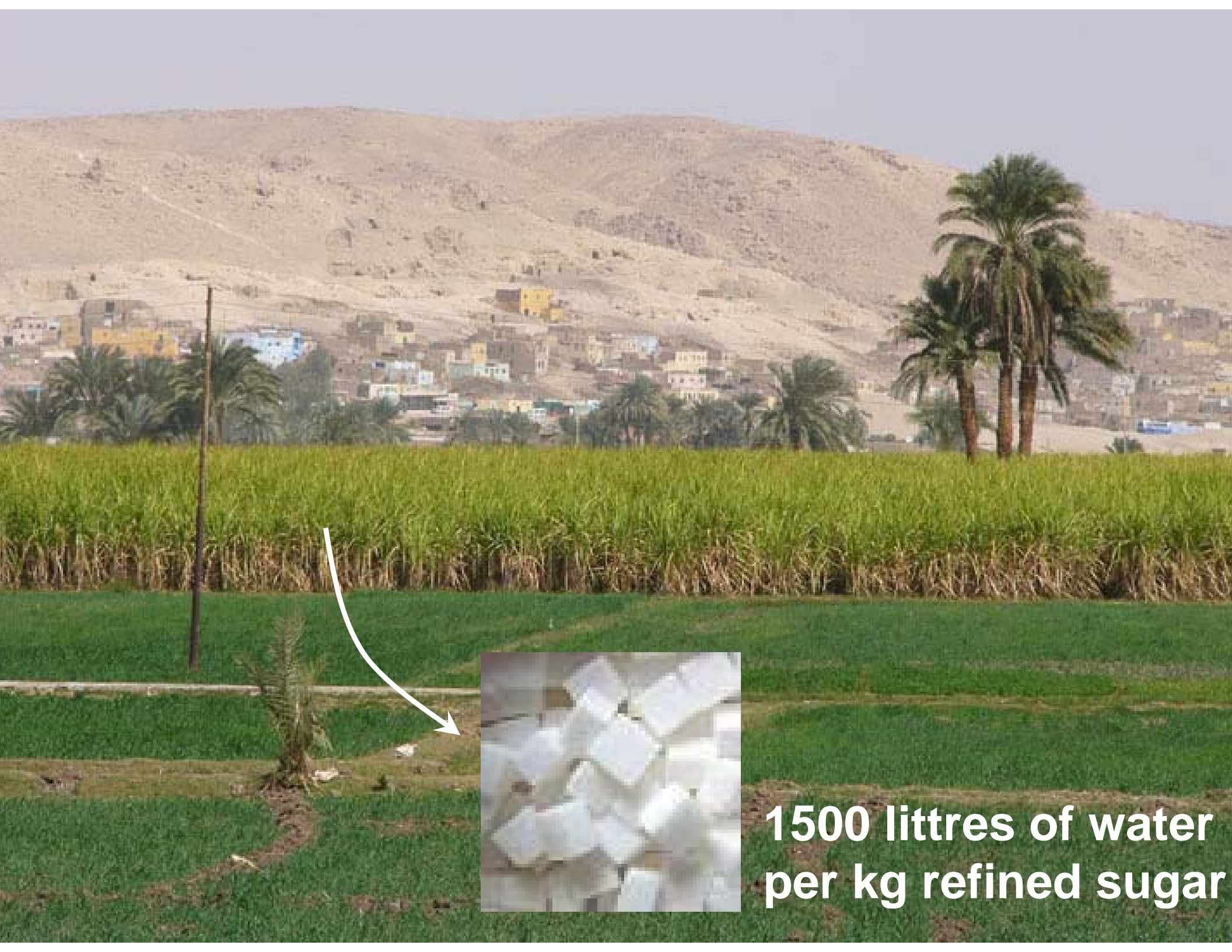




**40 litres of water
for 1 slice of bread**



135 litres
water

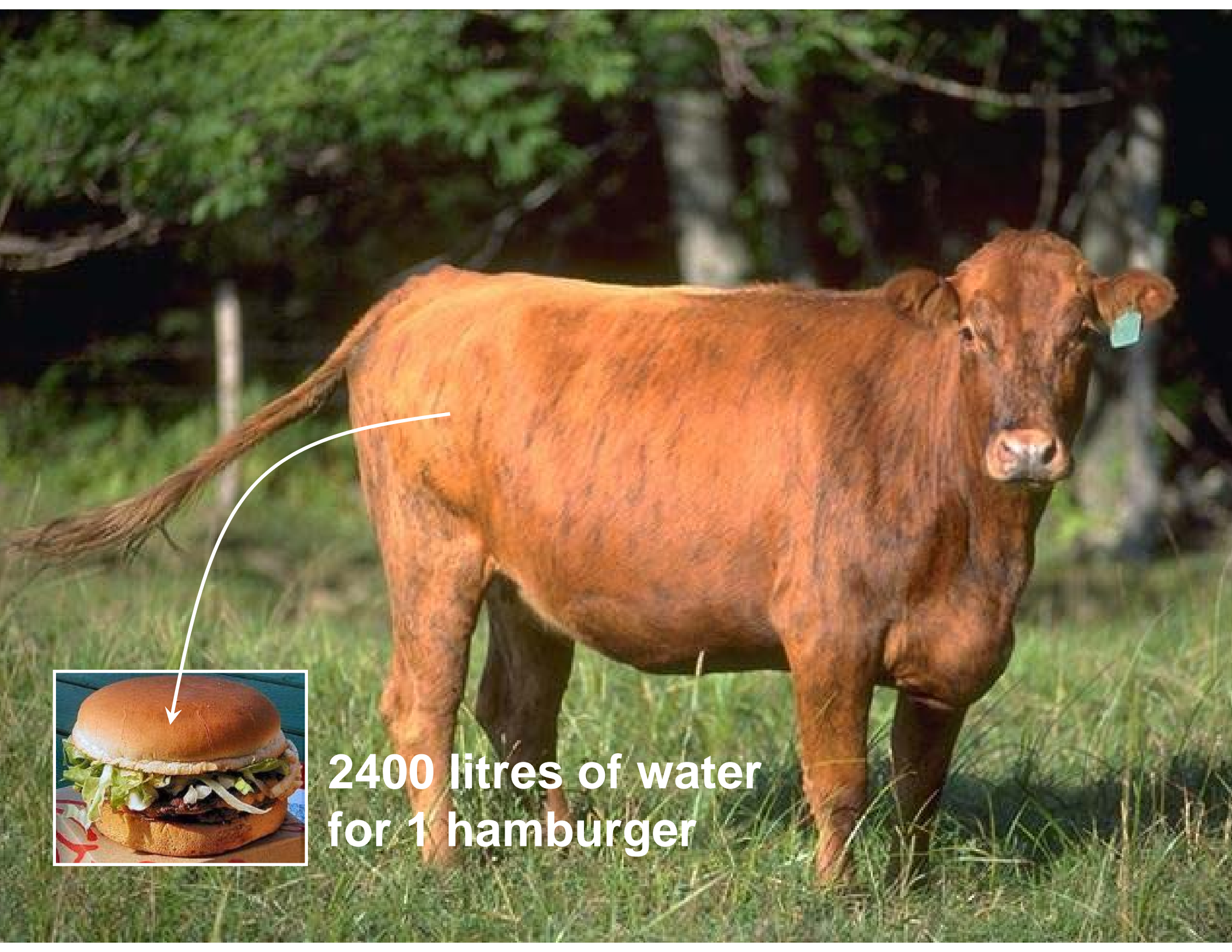


**1500 litres of water
per kg refined sugar**



**2,500 litres of water
for 1 cotton shirt**





**2400 litres of water
for 1 hamburger**



UK Water Footprint

- 4,645 litres per person per day (50 normal bath tubs) including
 - agricultural products 3,400 litres per person per day
 - industrial products 1,095 litres per person per day
 - household water 150 litres per person per day.
- 38% comes from the UK
- 62% is imported from elsewhere (6th largest importer in the world)
- Many of these are water scarce countries (e.g. Spain, Morocco, Pakistan)





...we do not leave enough water for nature

- Over-abstraction of groundwater and surface water results in
 - falling water tables, empty wells, and, in coastal areas, the intrusion of saltwater from the sea
 - lakes and wetlands dry out (important for wildlife but also for tourism, leisure, cleaning water, mitigating floods etc.
 - rivers do not reach the sea and stop providing their services to us (fishing, swimming, providing clean water)





Solutions

- EU's current response
 - ensure that the rates of abstraction are sustainable over the long term,
 - promote sustainable water use
 - ensure a balance between abstraction and recharge of groundwater
- Additional response needed
 - need to improve efficiency of water use and develop water saving culture
 - leave enough water in the ecosystems so they can continue serving us (environmental flows)
 - introduce fair water pricing, apply to all uses
 - reduce EU's water footprint
 - link water, food and energy





We modify our rivers and lakes

- We straighten rivers for navigation, block them with dams to produce energy, drain wetlands to use for agriculture, cut off their floodplains to appropriate space for human use
- 50% of Europe's wetlands have been lost, 80% of the Danube floodplains and 90% of the Rhine have been cut off over last century
- 200 football fields of land has been sealed off every day between 1990 and 2000 and therefore unable to regulate water flow (EEA 2007)



Photo credit: Jiri Rezac, WWF UK





for a living planet®

Impact and cessation of environmental services

Provisioning services:
fish, wood, drinking
water, genetic resources

Cultural services:
Recreational, tourism,
aesthetic, educational

Supporting services:
Nutrient cycling,
primary production

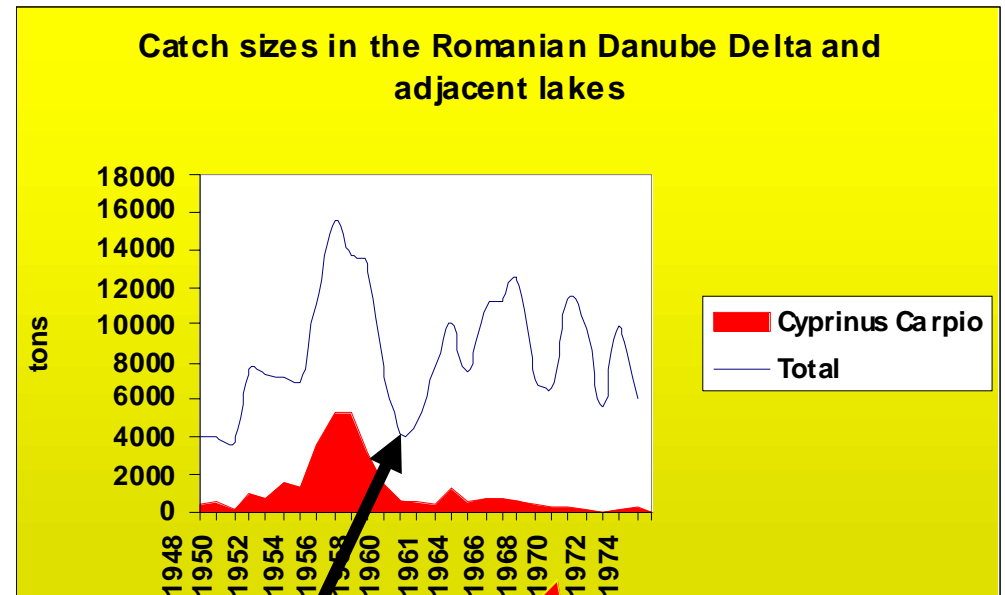
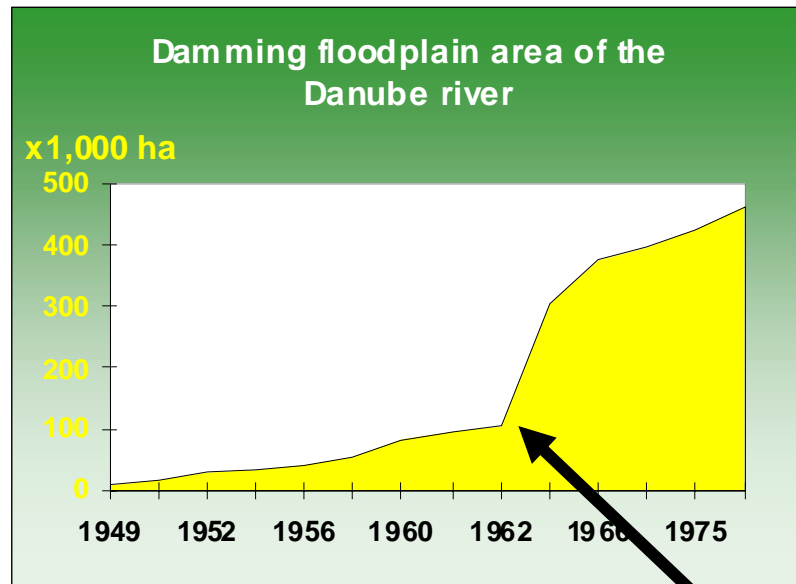
Habitats and species:
plants and animals

Regulating services:
flood protection,
ground water recharge,
climate regulation

Filter for the Black Sea:
nutrient retention



loss of wetlands = loss of fish catch



Source: Danube Delta Institute 2007

- corresponding loss of fish breeding areas
- corresponding loss of fish catch in the Danube Delta





Solutions

- EU's current response
 - Sustainability tests for new developments
 - Improvement of existing modification, removal obsolete structures
- Additional response needed
 - Give rivers space along their banks and courses wherever possible and work with nature not against it
 - Reconnect rivers with their floodplains and wetlands
 - New modifications as a matter of last resort and thorough assessment
 - Link land use rights with water protection duties



Photo credit: Jiri Rezac, WWF UK





Climate is changing...

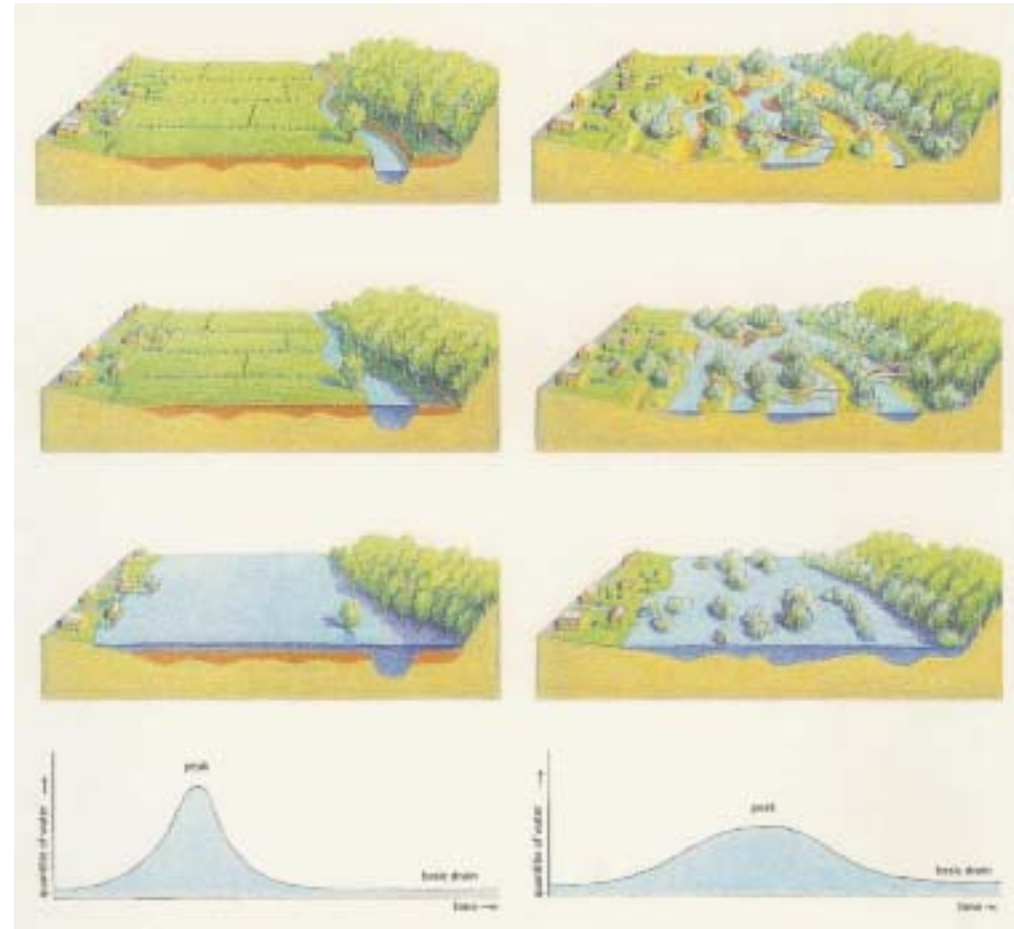
- Changes in precipitation – dry places expected to get drier, wet places wetter
- Increased frequency and intensity of extreme events – floods and droughts
- Increased temperature – increased temperature of water
- Changes to water quantity, water quality and timing
- But climate comes on top of other pressures

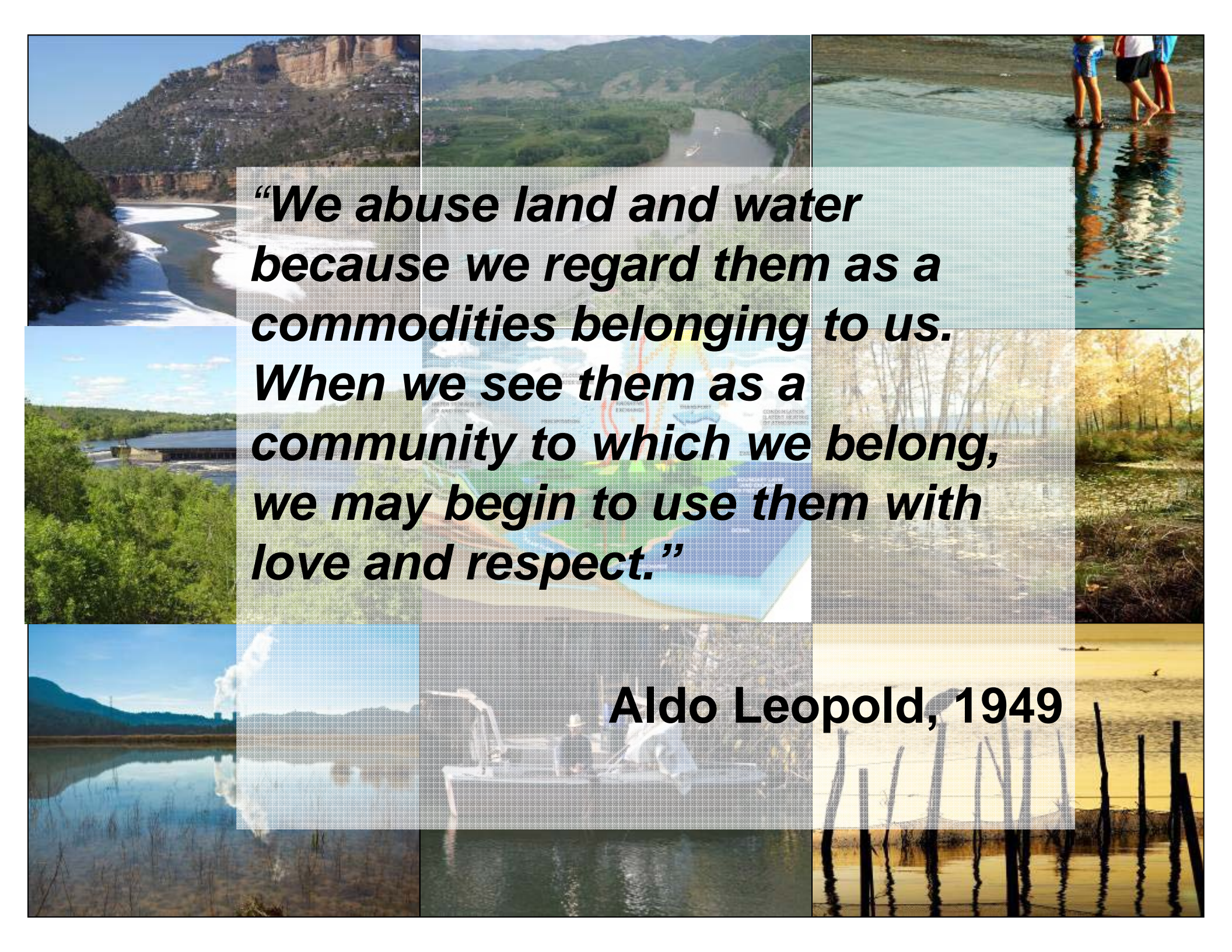




Solutions

- EU's current response
 - Improve knowledge base
 - Start with no-regret adaptation
- Additional response needed
 - Reduce non climate pressures
 - Increase resilience of natural and human systems
 - Help species, human communities, economies move their ranges
 - Give preference to green infrastructure
 - Climate aware planning





***“We abuse land and water
because we regard them as a
commodities belonging to us.
When we see them as a
community to which we belong,
we may begin to use them with
love and respect.”***

Aldo Leopold, 1949







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www.panda.org/eu

