

A land without water is a  
world without life

# Global Water Supply

## Learning Objective:

-**Analyse** how the demand for water is rising

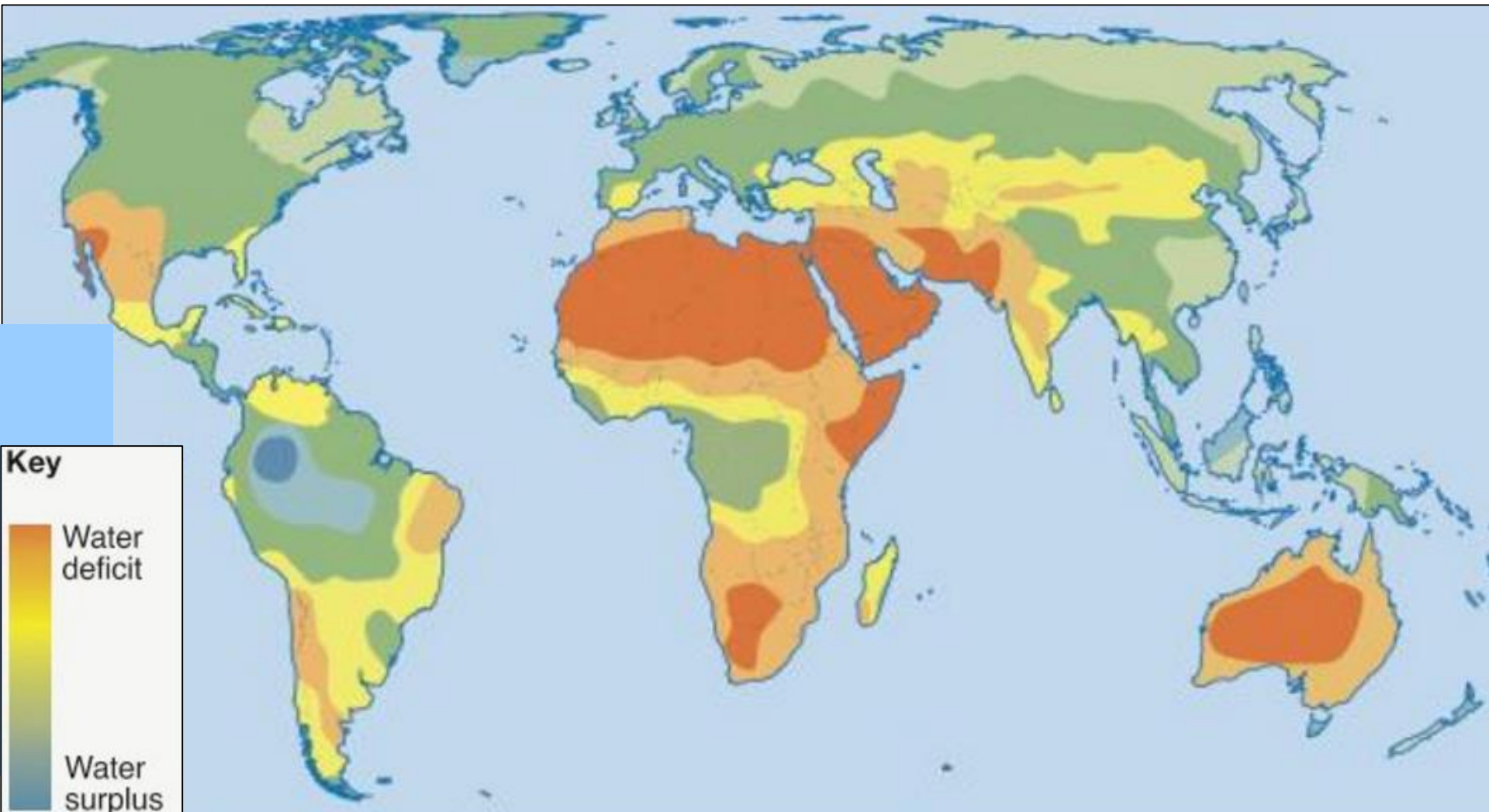


# Learning Outcomes:

- Explain** patterns of water surplus and deficit
- Examine** how water consumption can lead to water stress
- Assess** the causes of water insecurity



# Global patterns of water surplus and deficit



1. **Describe** the patterns of water surplus and water deficit.
2. **Explain** why areas have either a water surplus or deficit.
3. How might areas of ***low rainfall*** have a ***water surplus***?

# 1,400 children die each day from a lack of clean water

by **WILL STONE**

WE TAKE a visit to the toilet for granted but a third of the world's population is forced to make do without.

There are still 2.5 billion people around the world without basic sanitation, the latest World Health Organization (WHO) and Unicef report shows.

This includes more than a billion living in the poorest countries, forced to defecate in the open.

The vast majority are poorer people living in rural areas.

Worryingly, although access to clean water has improved since 1990, under-investment has meant the numbers have remained unchanged as the population soars.

That has left billions still at risk of diseases such as cholera, diarrhoea, dysentery, hepatitis A and typhoid because they live with poor sanitation and contaminated water.

Every day 1,400 children die from diseases caused by the health crisis, said Barbara Frost, chief executive of the WaterAid charity, which provides taps and toilets in 26 countries.

'Without safe water, basic toilets and good hygiene practices, communities



cannot lift themselves out of poverty,' she said. 'This report illustrates once again the need for action to ensure that

the right to water and sanitation services is available to everyone, everywhere.' WaterAid says the UN's Mil-

lennium Development Goal, to halve the proportion of people going without by 2015, will not be met.

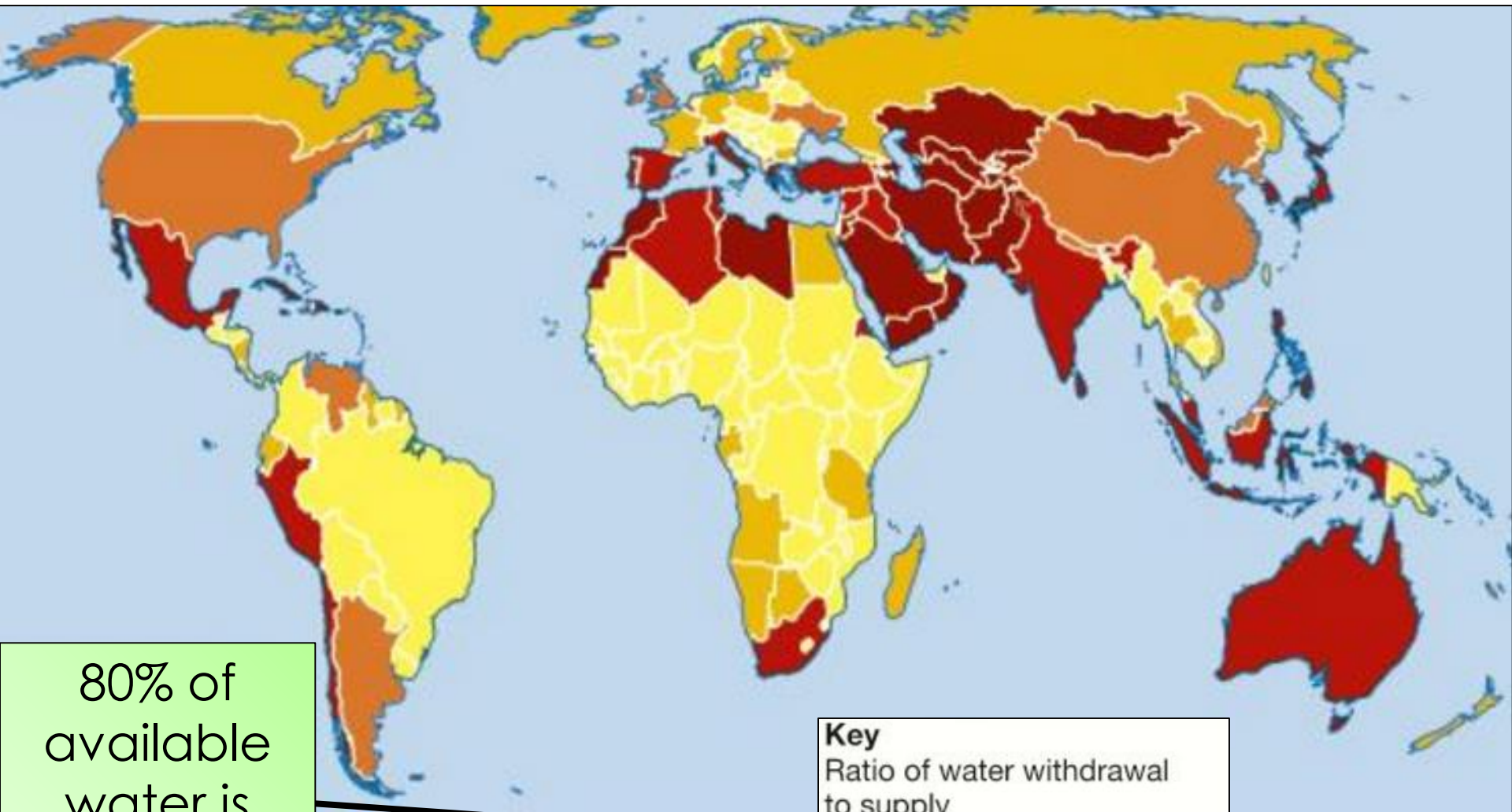


**Water security**: having access to clean water to provide good health and economic development.

**Water insecurity**: areas that don't have access to safe water supplies.



# Global water stress



80% of available water is used up each year

## Key

Ratio of water withdrawal to supply

- Extremely high (80+%)
- High (40-79%)
- Medium-high (20-39%)
- Low-medium (10-19%)
- Low (< 10%)

# Why is water consumption increasing?

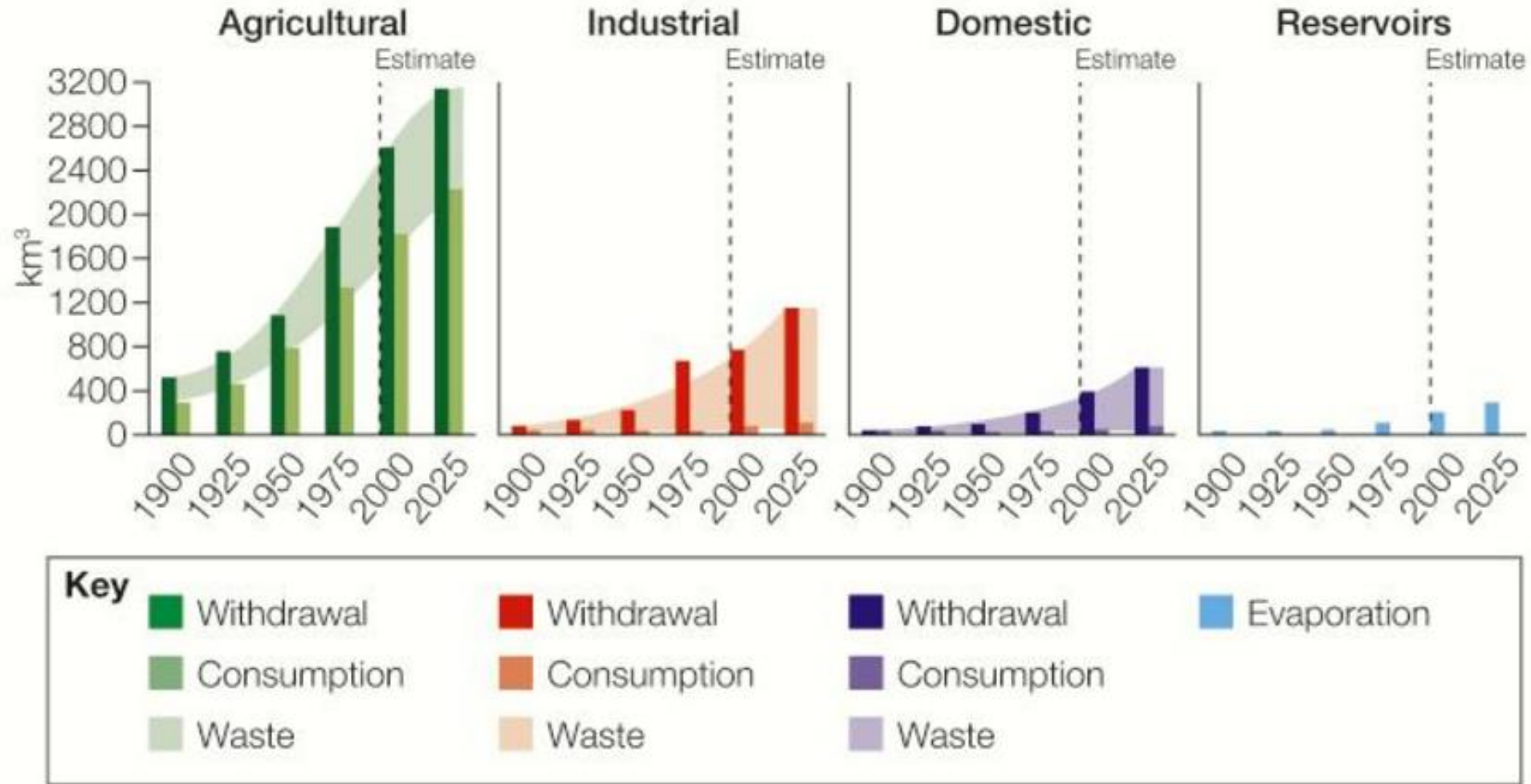
- Rising population (up 80 million a year):  
***How is it used?***
- Economic development:  
manufacturing, energy production (15% of global water), higher standard of living



Global demand for food to increase by 70% by 2050! How is water used?



# Global water consumption since 1900



*Explain how an increase in water consumption can lead to water stress.*

# What affects water availability?

Geology – infiltration of water (as in the Sahara Desert) through permeable rock builds up important groundwater supplies. Much of London's water comes from the chalk underlying the city.

Climate – regions with high rainfall usually have surplus water. Those with drier climates have less water available.

**Over-abstraction** – pumping water out of the ground faster than it is replaced by rainfall. This can cause wells to dry up, sinking water tables and higher pumping costs. Lower water tables mean that rivers are not fed by springs in the dry season.



Pollution – increasing amounts of waste and growing use of chemicals in farming have led to higher levels of pollution. In some LICs and NEEs water sources are often used as open sewers leading to **waterborne diseases**.

Limited infrastructure – poorer countries may lack the infrastructure for transporting water to areas of need (for example, pumping stations and pipes).

Poverty – many poorer communities lack mains water or only have access to shared water supplies.

**‘Poverty is the main factor affecting water supply.’  
To what extent do you agree with this statement?**

**Explain how geology can affect water availability.**

**Give 3 human factors that can lead to water insecurity**

CHALLENGE

What if everyone had  
clean water to drink?

