



9.2 Global Resources

Resource Challenges

Resources are things that humans require for life or to make our lives easier. Humans are becoming increasingly dependent on exploiting these resources, and as a result they are in high demand.

FOOD



Without enough nutritious food, people can become **malnourished**. This can make them ill. This can prevent people working or receiving education.

WATER



People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products.

ENERGY



A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for industry.

Demand outstripping supply

The demand for resources like food, water and energy is rising so quickly that supply cannot always keep up. Importantly, access to these resources vary dramatically in different locations

1. Population Growth



- Currently the global population is **7.3 billion**.
- Global population has risen **exponentially** this century.
- Global population is expected to reach **9 billion by 2050**.
- With more people, the **demand** for food, water, energy, jobs and space **will increase**.

2. Economic Development



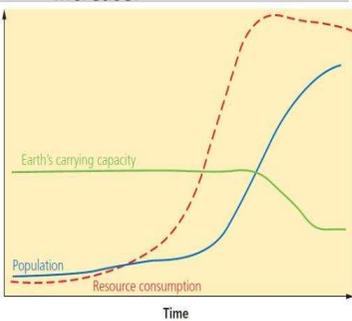
- As **LICs** and **NEEs** develop further, they require **more energy** for industry.
- **LICs** and **NEEs** want similar lifestyles to **HICs**, therefore they will need to **consume more resources**.
- Development means **more water is required** for food production as diets improve.

Resource Reliance Graph

Consumption – The act of using up resources or purchasing goods and produce.

Carry Capacity – A maximum number of species that can be supported.

Resource consumption exceeds Earth's ability to provide!



3. Changing Technology and Employment



- The demand for resources has driven the **need for new technology** to reach or gain more resources.
- More people in the **secondary and tertiary industry** has increased the **demand for resources** required for electronics and robotics.

Water in the UK



Growing Demand

The average water used per household has risen by **70%**. This growing demand is predicted to increase by **5% by 2020**.

This is due to:

- A growing UK population.
- Water-intensive appliances.
- Showers and baths taken.
- Industrial and leisure use.
- Watering greenhouses.

Pollution and Quality



Cause and effects include:

- Chemical run-off from farmland can destroy habitats and kills animals.
- Oil from boats and ships poisons wildlife.
- Untreated waste from industries creates unsafe drinking water.
- Sewage containing bacteria spreads infectious diseases.

Management

UK has **strict laws** that limits the amount of discharge from factories and farms.

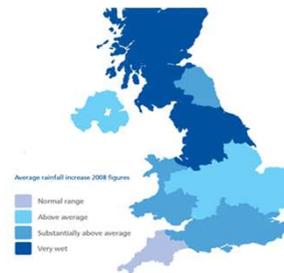
Education campaigns to inform what can be disposed of safely.
Waste water treatment plants remove dangerous elements to then be used for safe drinking. Pollution traps catch and filter pollutants.

Deficit and Surplus

The north and west have a **water surplus** (more water than is required).

The south and east have a **water deficit** (more water needed than is actually available). More than half of England is experiencing **water stress** (where demand exceeds supply).

Water stress in the UK



Water Transfer

Water transfer involves moving water through pipes from areas of surplus (Wales) to areas of deficit (London).

Opposition includes:

- Effects on **land and wildlife**.
- High maintenance **costs**.
- The **amount of energy** required to move water over long distances.

Energy in the UK



Growing Demand

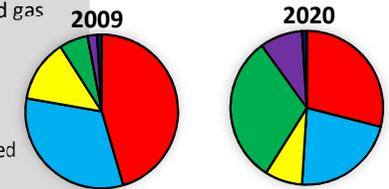
The UK **consumes less energy** than compared to the 1970s despite a smaller population. This is due to the **decline of industry**.

Energy Mix

The majority of UK's energy mix comes from **fossil fuels**. By 2020, the UK aims for 15% of its energy to come from **renewable sources**. These renewable sources do not contribute to **climate change**.

Changes in Energy Mix

- 75% of the UK's oil and gas has been used up.
- Coal consumption has declined.
- UK has become too dependent on imported energy.



Significance of Renewables

+ The UK government is investing more into low carbon alternatives.
+ UK government aims to meet targets for reducing emissions.
+ Renewable sources include wind, solar and tidal energy.
- Although infinite, renewables are still expensive to install.
- Shale gas deposits may be exploited in the near future

Exploitation

New plants provide job opportunities.
Problems with safety and possible harm to wildlife.
Nuclear plants are expensive.



Locals have low energy bills. Reduces carbon footprint. Construction cost is high. Visual impacts on landscape. Noise from wind turbines.