Your notes

GCSE Geography: revision notes

Resource management: food, water and energy

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Why resources matter

- Food, water and energy are essential for people's health and for economic development. They are unevenly spread: some places have a surplus and others have a deficit.
- Demand is rising because of population growth, economic development and changing lifestyles.

Resources in the UK

- Food: rising demand for exotic foods all year round, concern about **food miles** and **carbon footprints**, growing interest in organic and local food, and the growth of agribusiness (large-scale, intensive farming run like a business).
- Water: the north and west have a water surplus (more rain and fewer people), while the south and east have a deficit (less rain and more people). **Water transfer** schemes could move water, but they are expensive. Water quality is protected by controlling pollution.
- Energy: the UK's **energy mix** has changed. North Sea oil and gas are declining, and the last coal-fired power station closed in 2024. Renewables, especially wind, now generate around half of the UK's electricity, and new nuclear power stations are being built.

Option: food

- **Food security** means having reliable access to enough affordable, nutritious food. Food insecurity can cause famine, undernutrition, soil erosion, rising prices and conflict.

- Ways to increase food supply: irrigation, hydroponics and aeroponics (growing plants without soil), the new green revolution, biotechnology such as GM crops, and appropriate technology. Large-scale irrigation, such as the Indus Basin Irrigation System in Pakistan, can greatly increase food production.

Option: water

- **Water security** means having enough reliable, clean water. **Water stress** happens when demand is greater than supply. Water insecurity can cause waterborne disease, pollution, food shortages and conflict.
- Ways to increase water supply: dams and reservoirs, **water transfer** schemes (such as China's South–North **Water Transfer** Project) and desalination (removing salt from seawater).
- Sustainable local schemes, such as the Wakel River Basin project in Rajasthan, India, use rainwater harvesting and small check dams.

Option: energy

- **Energy security** means having reliable, affordable energy. Energy insecurity can lead to exploring difficult areas (such as the Arctic), fracking, higher prices and conflict.
- Ways to increase energy supply: renewables (wind, solar, hydroelectric, tidal, geothermal and biomass) and non-renewables (fossil fuels and nuclear).
- Sustainable energy use includes insulation, efficient appliances, electric vehicles and small local schemes such as micro-hydro power in remote villages, as at Chambamontera in Peru.

Water resources (Eduqas)

- Eduqas Component 2, Theme 6. Global water use has risen fast over the last 100 years, with population growth, farming and consumerism.
- A **water footprint** is all the water used to make the things a person or country uses. **Water security** means having reliable access to enough safe water.
- Supply is managed by reservoirs, **water transfer** schemes and taking groundwater from aquifers. For example, the Elan Valley reservoirs in Wales have supplied Birmingham through a 118 km aqueduct since 1904.
- International rivers cause tension: Ethiopia's Grand Ethiopian Renaissance Dam on the Blue Nile worries Egypt and Sudan downstream.
- Small-scale schemes use appropriate technology, such as rainwater harvesting.
- **Over-abstraction** takes groundwater faster than it refills, as with the Ogallala Aquifer under the US Great Plains, lowering water tables.

Key terms

Food security	Having reliable access to enough affordable, nutritious food.

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Water security	Having reliable access to enough clean water.
Energy security	Having reliable access to affordable energy.
Water stress	When the demand for water is greater than the supply.
Food miles	The distance food travels from where it is produced to where it is eaten.
Carbon footprint	The amount of greenhouse gas produced by an activity or product.
Energy mix	The combination of energy sources a country uses.
Water transfer	Moving water from an area of surplus to an area of deficit.
Renewable energy	Energy from a source that won't run out, such as wind or solar power.
Water footprint	All the water used to make the products a person or country uses. (Eduqas)
Over-abstraction	Taking groundwater faster than it is naturally replaced. (Eduqas)

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Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is food security?
2. What are food miles?
3. Which part of the UK has a water surplus?
4. Why does the south-east of England have a water deficit?
5. What is a water transfer scheme?
6. What happened to coal power in the UK in 2024?
7. What is the energy mix?
8. What is water stress?

Answers

1. Having reliable access to enough affordable, nutritious food
2. The distance food travels from where it is grown to where it is eaten
3. The north and west
4. Less rain falls there and more people live there
5. Moving water from areas of surplus to areas of deficit
6. The last coal-fired power station closed
7. The combination of energy sources a country uses
8. When the demand for water is greater than the supply

What to do next

Practise 15 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

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