

Which factors link to today's learning?
Social / Economic / Environmental



The Big Picture

- Why are resources important?
- How are resources distributed across the world?
- Why is the demand for food in the UK changing?
- Why does our food have high carbon footprints?
- What is agribusiness and organic farming?
- Why is the demand for water in the UK changing?
- How can we manage our water supply in the UK?
- Why is our demand for energy in the UK changing?
- What are the impacts of energy?
- How is food distributed across the world?
- Why is food consumption increasing?
- What factors affect food supply?
- What is the impact of food insecurity?
- How can we increase food supply?
- What is the Indus Basin Irrigation System?
- How can food production be sustainable?
- How is the food production in Makueni sustainable?

GCSE Geography: The Challenge of Resource Management Knowledge Organiser

Distribution of resources

Food, water and energy are resources that help maintain social and economic wellbeing. Their production/consumption isn't equally spread between countries. The UK has reserves of each resource type.

The significance of food, water and energy to economic and social well being

They are key for human wellbeing. All lead to social and economic benefits which all increase the standard of living.

Food

- Calories provide energy
- Availability depends on climate, soil and level of technology
- Malnourishment means disease and death. Can also lead to underperforming at school which decreases economic wellbeing in life
- More than 1 billion people are malnourished
- 2 billion are undernourished (poor diet)
- Obesity is an issue in some areas

Water

- Used for survival, washing, food production, industry
- We need clean safe water otherwise we can get stuck in a cycle of poverty

Energy

- Traditionally we get energy from oil, coal and wood
- Many different sources
- Used for production, heating, transport and for water supply (e.g. wells)

Increasing food supply

Irrigation - the artificial watering of land.

- Irrigation projects can involve the construction of expensive dams and reservoirs, such as in the Indus Valley of Pakistan. They often benefit larger commercial farming.
- There are smaller schemes such as in Makeuni County in eastern Kenya. Pipelines and storage tanks enable drip irrigation to support domestic food cultivation.

The 'new' green revolution - focuses on sustainability and community. It uses techniques such as:

- Water harvesting and irrigation
- Soil conservation
- Improving seed and livestock quality using science and technology.

Appropriate technology - using skills or materials that are cheap and easily available to increase output.

- Is particularly appropriate for people living in poorer countries.
- An example is using a bicycle to de-husk coffee beans or corn cobs.

Aeroponics and hydroponics

- **Aeroponics** - plants are sprayed with fine water mist containing plant nutrients. Excess water is re-used. This enables small scale farmers to increase yields and lower production costs.
- **Hydroponics** - plants are submerged in nutrient rich water and kept under specific light and heat conditions.

Biotechnology - uses living organisms to make or modify products or processes.

- Includes the development of genetically modified crops, which produce higher yields and use fewer chemicals.
- In the UK, there is opposition to GM crops because of the possible effects on the environment and human health.



Here are some key words from this topic. **Can you add anymore?**

resources	are things that people use. Some resources are essential for survival, whilst others are needed to maintain a standard of living.
food security	when people have enough nutritious and affordable food to eat.
surplus	have more than they need
deficit	have too little.
irrigation	The channelling of water from rivers and streams to fields in order to help crops grow.
agribusiness	Application of business skills to agriculture.
carbon footprint	A measurement of all the greenhouse gases we individually produce.
organic	Growing crops or rearing livestock without the use of artificial chemicals.

CEIAG Link: For this topic we can make links to a variety of professions:

Climate Scientist
 Agribusiness Management
 Energy Management
 Agronomist
 Aquaculturist



If you are interested in the above careers, don't forget you can do some research and speak to Mrs Ackroyd.

The Makueni Food and Water Security Programme - provided direct help to two small villages and Kanyenoni Primary School in Makueni County, Kenya.

The programme included:

- Improving water supply by building sand dams for each village.
 - Providing a reliable source of water for crops and livestock
 - A training programme to support local farmers
 - Growing trees to reduce soil erosion.
- Sand dams store water in the ground, filtering and cleaning the rainwater as it soaks into the soil. They are cost-effective and sustainable.

The project has been very successful because:

- Crop yields and food security have increased
- Water-borne diseases have been reduced
- Less time is wasted fetching water.