

**Case Studies:**

**Large scale Agricultural development:** Almeria - Located in Southern Spain, the site involves huge greenhouses using hydroponics.

*Advantages*

* Seasonal food all year round.
* Provides food security.

*Disadvantages*

* Money mostly goes to large companies not community.
* Requires a lot of energy.
* Causes visual & light pollution.

**Sustainable food supply:** Rice-fish farming - Jamalpur, Bangladesh

* Involves breeding fish in rice paddies. Mutually beneficial as the fish faeces acts as a natural fertiliser, while the fish feed on the pests trying to eat the rice.

*Socially* - money for education and healthcare, work as a community.

*Economically* – provides jobs and wages.

*Environmentally* – no chemical fertilisers of pesticides.

**Reasons for increased demand**:

* Currently the global population is 8 billion. Global population is expected to reach 9 billion by 2050.
* As LICs and NEEs develop further, they require more energy for industry. Development means more water is required for food production as diets improve.
* 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.

**Food Security –** enough food to meet the demand and remain a healthy lifestyle.

**Food Insecurity** – not enough food to meet the demand.

***Human and Physical reasons for Food insecurity:***

Poverty prevents people affording food and buying equipment.

Conflict disrupts farming and prevents supplies.

Food waste due to poor transport and storage.

Climate Change is affecting rainfall patterns making food production difficult.

The quality of soil is important to ensure crops have key nutrients.

Water supply needs to be reliable to allow food to grow.

Pest, diseases and parasites can destroy vast amounts of crops that are necessary to populations.

Extreme weather events can damage crops (i.e. floods).

***Increasing food supply:***

Hydroponics - A method of growing plants without soil. Instead they use nutrient solution.

Aeroponics – A method of growing plants by spraying roots which hang rather than using soil.

New Green Revolution - Aims to improve yields in a more sustainable way. Involves using both GM varieties and traditional and organic farming.

Biotechnology - Genetically modified (GM) crops changes the DNA of foods to enhance productivity and properties.

Irrigation - Artificially watering the land so crops can grow. Useful in dry areas to make crops more productive.

***Sustainable food supply:***

Organic Farming - The banned use of chemicals and ensuring animals are raised naturally.

Permaculture - People growing their own food and changing eating habits. Fewer resources are required.

Urban Farming - Planting crops in urban areas. i.e. roundabouts.

Managed Fishing – Includes setting catch limits, banning trawling,promoting pole and line methods.

**Resources such as food, energy and water are what is needed for basic human development.**

**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.

**KS4 Resource Management**

**Geography**