



Edexcel GCSE Biology



Your notes

Food Production

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Food Security



Your notes

Factors Affecting Food Security

- **Food security** is having **enough food to feed a population**
- That 'population' could represent a group of people on a range of different scales, from a particular family, to a town, to a region or even a whole country
- Food security gives an indication of **how much food is available**

Biological Factors Threatening Food Security Table



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Factor	How it is threatening food security
Changing population	An increased population due to increasing birth rate has threatened food security in some countries (the birth rate of many developing countries is rising very quickly).
Changing diets	Changing diets in developed countries means scarce food resources (often from developing countries) are transported around the world, meaning these food sources become even more scarce in the countries that need them most.
Changing environment	Environmental changes can affect food production, leading to widespread famine occurring in some countries (eg. if the rains fail in a particular year).
Pests and pathogens	Farming is often threatened by new pests and pathogens (eg. bacteria and viruses) that affect crops or livestock.
Costs	Farming has high input costs. The costs of irrigation (watering crops), machinery and livestock can make farming too expensive, leading to a lack of farming and food production in some areas.
Conflicts	Conflicts in some parts of the world have already affected the availability of water or food and will continue to do so as these resources become increasingly scarce in some areas for many of the reasons above.

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Sustainability

- Sustainable methods of **farming** and **food production** are needed in order to **overcome food shortages** and help populations whose food security is under threat
- Sustainable food production involves making **enough food** for the **current population**, whilst also ensuring this is done **without using resources** (such as water and soils) **faster than these**

resources can be renewed and used again (so that the **future population** also has **enough food**)

- It is often about finding the right **balance**, for example:
 - **Biofuels**, being produced as a renewable alternative to fossil fuels, take up valuable land space, which previously would have been used for food production
 - It is an important balance between providing **renewable biofuels** and producing enough **food** to feed the growing population
 - An increase in the **cost of farming** methods for food production may become unsustainable for farmers in the future
 - This requires a balance between **cost and food provision**



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