

Edexcel Biology GCSE

Topics 9.9 to 9.11B - Biodiversity and food security

Flashcards

This work by [PMT Education](https://www.pmt.education) is licensed under [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)



What is biodiversity?



What is biodiversity?

The variety of living organisms in an ecosystem.



How does fish farming affect biodiversity?



How does fish farming impact biodiversity?

- Food used to feed the fish and waste can leak into water sources, causing eutrophication
- Parasites from fish farms may spread and contaminate surrounding ecosystems
- Other organisms may become tangled in netting



How does the use of fertilisers affect biodiversity?



How does the use of fertilisers affect biodiversity?

Excess fertiliser can wash into water sources causing eutrophication and death of many species. This reduces biodiversity.



Describe how fertilisers can cause eutrophication



Describe how fertilisers can cause eutrophication

1. Fertiliser run-off into rivers and lakes
2. Nutrients build-up in water
3. Algal bloom blocks sunlight
4. Aquatic plants cannot photosynthesise \therefore less oxygen produced
5. They die and decompose
6. Decomposers further deplete oxygen levels
7. Animals can no longer respire aerobically so die



How does the introduction of non-indigenous species affect biodiversity?



How does the introduction of non-indigenous species affect biodiversity?

- They may out-compete native species, causing a reduction in population numbers
- Native species may become the prey of non-indigenous species
- They may bring new diseases which could kill large numbers of native species, reducing biodiversity



How can humans more positively impact biodiversity?



How can humans more positively impact biodiversity?

- Protection of endangered species e.g. making hunting illegal, breeding programmes increase population sizes
- Conservation schemes e.g. national parks, seed banks, zoos
- Reforestation
- Sustainable farming e.g. fewer pesticides
- Minimising global greenhouse gas production



What is reforestation?



What is reforestation?

Replanting forests to help restore biodiversity



How do conservation schemes protect biodiversity?



How do conservation schemes protect biodiversity?

They prevent species from becoming extinct and increase population numbers, maintaining biodiversity.



Outline the benefits of maintaining biodiversity



Outline the benefits of maintaining biodiversity

- Ensures future food requirements can be met, reduces damage to food chains
- Increases the likelihood of species adapting to future environmental change
- Many plant species are yet to be discovered and may contain chemicals that could be used in future medicines
- Safeguarding valuable future resources e.g. fuels, paper
- Aesthetics - culture, ecotourism etc.
- Jobs provided by ecotourism, reforestation and conservation schemes



What is food security? (biology only)



What is food security? (biology only)

Ensuring that populations have access to adequate amounts of safe and nutritious foods



List the biological factors affecting food security (5) (biology only)



List the biological factors affecting food security (5) (biology only)

- Rising human population
- Changing diets
- New pests and pathogens
- Environmental change
- Sustainability



Describe how the rising human population affects food security
(biology only)



Describe how the rising human population affects food security (**biology only**)

As human population increases, global food production must also increase in order to meet the growing demand for food.



Describe how changing diets affect food security (biology only)



Describe how changing diets affect food security (biology only)

- Greater consumption of meat and fish in wealthier populations
- Less energy and biomass available from livestock than crops
- Livestock use land for grazing and are fed crops that could otherwise be used for human consumption
- Less food is available for humans ∴ reduction in food security



Describe how new pests and pathogens
affect food security (biology only)



Describe how new pests and pathogens affect food security (**biology only**)

Pests and pathogens can reduce or destroy crop yields, negatively impacting food security.



Describe how sustainability affects food security (biology only)



Describe how sustainability affects food security (biology only)

- Unsustainable farming methods disrupt food chains, compromising the ability to meet future food requirements
- Due to the high input costs, many LEDCs cannot maintain modern farming methods
- Using land for biofuel production reduces land available for crops



Describe how environmental change due
to human activity affects food security
(biology only)



Describe how environmental change due to human activity affects food security (biology only)

- Emissions of greenhouse gases have been linked to global warming which may affect crop growth
- Salinisation reduces agricultural potential of soils

