



GEO.HU20 UK Food Security: Agribusiness, Food Miles and Sustainable Choices

AQA 8035 · Calculators not allowed · about 40 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Define the term 'food miles' as it is used when discussing food imports to the UK.

(Total for Question 1 is 1 mark)

- 2** Give one example of a food product that often has high food miles for UK consumers, and name a likely country of origin.

(Total for Question 2 is 1 mark)

- 3** Define 'agribusiness' in the context of UK farming, for example in eastern England such as East Anglia.

(Total for Question 3 is 1 mark)

- 4** State TWO reasons why agribusiness has grown in parts of the UK such as East Anglia.

(Total for Question 4 is 2 marks)

- 5** Explain one environmental disadvantage of intensive agribusiness practices in the UK, such as those used to boost cereal yields in eastern England.

(Total for Question 5 is 2 marks)

- 6** Describe ONE way supermarkets influence consumer food choice and waste in the UK supply chain.

(Total for Question 6 is 2 marks)

- 7** Table A shows fictional figures for annual UK imports of selected fresh produce in 2024, measured in thousand tonnes. Use these figures to answer parts a and b.

Table A

Produce	Imports to UK 2024 (thousand tonnes)
Tomatoes	850
Apples	220
Avocados	120
Bell peppers	430

- (a) Using Table A, state which produce had the second highest import tonnage to the UK in 2024. (1)
- (b) Using the figures in Table A, describe the pattern of imports among these four produce items. (2)

(Total for Question 7 is 3 marks)

- 8** Using Table A, calculate the percentage of the total imports (of the four items listed) accounted for by tomatoes. Give your answer to one decimal place. Show your working.

(Total for Question 8 is 2 marks)

- 9** Define the term 'embedded water' in relation to food production, and give one example of a food with a high embedded water footprint.

(Total for Question 9 is 2 marks)

- 10** Explain the advantages and disadvantages of agribusiness and importing food for UK food security. Refer to both agribusiness and imports in your answer.

Explain the advantages and disadvantages of agribusiness and importing food for UK food security.

(Total for Question 10 is 6 marks)

- 11** Name one UK region where agribusiness and large-scale arable farming are common, and give one brief reason why this region is suitable.

(Total for Question 11 is 1 mark)

- 12** Give one action a UK consumer can take to reduce the food miles associated with their shopping.

(Total for Question 12 is 1 mark)

- 13** Give one advantage of choosing organic or local food for environmental sustainability.

(Total for Question 13 is 1 mark)

14 Compare, in one sentence, the likely carbon impact of eating imported out-of-season tomatoes versus UK-grown seasonal tomatoes.

(Total for Question 14 is 1 mark)

Mark scheme · GEO.HU20 UK Food Security: Agribusiness, Food Miles and Sustainable Choices

Question 1

- **B1** the distance food travels from where it is produced to where it is eaten, oe
- **Answer: The distance food travels from where it is produced to where it is eaten.**

Question 2

- **B1** one valid example and country, e.g. bananas from Costa Rica, oe
- **Answer: Bananas from Costa Rica.**

Question 3

- **B1** large-scale, industrial-style farming businesses that use modern technology and inputs to produce food for markets, oe
- **Answer: Large-scale, industrial-style farming businesses that use modern technology and inputs to produce food for markets.**

Question 4

- **B1** reason 1, e.g. fertile soils and flat land suitable for large fields, oe
- **B1** reason 2, e.g. access to technology and investment enabling mechanisation and high yields, oe
- **Answer: Fertile soils and flat land suitable for large fields; access to technology and investment enabling mechanisation and high yields.**

Question 5

- **B1** identification of an environmental disadvantage, e.g. heavy pesticide or fertilizer use causing water pollution, soil degradation or loss of biodiversity, oe
- **B1** linked development, e.g. pesticides entering rivers harming aquatic life or nitrate leaching causing algal blooms, oe
- **Answer: Heavy pesticide and fertiliser use can cause water pollution and reduce biodiversity; for example nitrates can leach into rivers and cause algal blooms that damage aquatic ecosystems.**

Question 6

- **B1** identification, e.g. supermarkets set presentation, packaging and size standards, oe
- **B1** linked detail, e.g. strict cosmetic standards lead to rejection of produce and increased food waste, or promotions cause overbuying and household waste, oe
- **Answer: Supermarkets set presentation and size standards which can lead to reject rates for imperfect produce and increased waste; promotions and multi-buy offers can encourage overbuying and more household food waste.**

Question 7

- (a) **B1** bell peppers
- (a) **Answer: Bell peppers.**
- (b) **B1** one clear observation, e.g. tomatoes have the highest imports while avocados have the lowest, oe
- (b) **B1** supporting data or comparative detail, e.g. tomatoes (850) are almost twice the tonnage of bell peppers (430) and far higher than apples (220) and avocados (120), oe
- (b) **Answer: Tomatoes have the highest imports (850 thousand tonnes) and avocados the lowest (120); tomatoes are almost twice the tonnage of bell peppers (430) and much higher than apples (220) and avocados (120).**

Question 8

- **M1** $850 / (850 + 220 + 120 + 430)$ seen, oe
- **A1** 52.5% cao
- **Answer: 52.5%.**

Question 9

- **B1** definition, e.g. the total volume of water used in the production and processing of a food item, oe
- **B1** example, e.g. beef or almonds as foods with a high embedded water footprint, oe
- **Answer: Embedded water is the total volume of water used in producing and processing a food item. Example: beef typically has a high embedded water footprint.**

Question 10

- **Level 3** (5-6): A well-developed explanation that considers both advantages and disadvantages for agribusiness and for importing food, uses relevant examples (e.g. East Anglia agribusiness, imported fruit), links points to impacts on UK food security such as availability, cost, environmental effects and resilience, and reaches a clear conclusion.
- **Level 2** (3-4): A clear explanation that covers advantages and disadvantages of either agribusiness or imports and makes valid links to food security, but with limited examples or balance between the two topics.
- **Level 1** (1-2): One or two simple points about agribusiness or importing food with little development or linking to food security.
- **Indicative content:**
 - Advantages of agribusiness: high yields, efficient large-scale production, lower per-unit costs, reliable domestic supply that can improve national food availability and reduce some dependence on imports.
 - Disadvantages of agribusiness: environmental harm such as soil degradation, pesticide and fertiliser pollution, loss of biodiversity, and social issues such as consolidation of land ownership and loss of small farms.
 - Advantages of importing food: increases choice and access to out-of-season produce, helps balance supply during poor domestic harvests, can be economically efficient if other countries have comparative advantages.
 - Disadvantages of importing food: vulnerability to global supply chain disruptions, higher food miles and embedded carbon/water for some products, and possible negative impacts on UK self-sufficiency and resilience.
 - A balanced answer might conclude that agribusiness supports year-round domestic supply and can improve food security if managed sustainably, but that overreliance on either intensive domestic production or imports has trade-offs and a mixed strategy may be best.

Question 11

- **B1** region named and one valid reason, e.g. East Anglia: flat fertile soils suitable for large-scale arable farming, oe
- **Answer: East Anglia: flat, fertile soils and large fields suitable for mechanised arable farming.**

Question 12

- **B1** one valid action, e.g. buy seasonal UK-grown produce, shop at local markets, or choose locally labelled products, oe
- **Answer: Buy seasonal UK-grown produce or shop at local markets to choose locally produced foods.**

Question 13

- **B1** one valid advantage, e.g. organic farming can reduce pesticide use and support biodiversity, or local food reduces transport emissions, oe
- **Answer: Organic farming can reduce pesticide use and support biodiversity, and local food reduces transport emissions.**

Question 14

- **B1** one-sentence comparison, e.g. imported out-of-season tomatoes usually have higher carbon impacts due to air/sea transport and energy for off-season production, whereas UK seasonal tomatoes typically have lower transport emissions and may require less energy overall, oe
- **Answer: Imported out-of-season tomatoes usually have a higher carbon impact because of long-distance transport and off-season production energy, while UK seasonal tomatoes typically have lower transport emissions and may require less overall energy.**