



GEO.KS31 Global and UK Resource Supply: Food, Water and Energy Overview

AQA 8035 · Calculators not allowed · about 25 minutes

Total Marks

--

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Define the term 'resource security' as used in the context of food, water and energy supply in a country.

(Total for Question 1 is 3 marks)

- 2** State three ways in which food, water and energy contribute to economic and social well being in a country. Name the resource and the role in each example.

(Total for Question 2 is 3 marks)

- 3** Give one reason why some countries are described as food surplus areas and others as food deficit areas at a global scale. Refer to the concept of surplus compared with domestic need in your answer.

(Total for Question 3 is 3 marks)

- 4** State THREE trends in the UK's energy supply over recent decades, naming the direction of change for UK domestic production, for imports, and for renewables.

(Total for Question 4 is 3 marks)

- 5** Give THREE reasons why the UK now imports a larger share of its food than it did several decades ago. Mention consumer behaviour, economic factors and land/climate limits in your answer.

(Total for Question 5 is 3 marks)

- 6** State ONE region of the UK that is typically described as a water surplus area, according to national water-resource patterns, and name ONE region often described as water-deficit.

(Total for Question 6 is 2 marks)

- 7** Give ONE reason why the UK has seen a rising share of food imported in recent decades. The answer should refer to production, demand or cost.

(Total for Question 7 is 2 marks)

- 8** Define the term 'surplus area' in the context of UK water or energy supply, making clear the comparison being used.

(Total for Question 8 is 1 mark)

- 9** Study the simplified map information below and answer the two parts. Prompt: A simplified UK water-resource map shows higher annual rainfall and river flows in the north and west of the UK, labelled 'surplus', and lower rainfall with higher demand in the south and east, labelled 'deficit'. The map subtitle reads: 'Illustrative UK pattern: water surplus in north and west, water deficit in south and east'.

Part a: Using the map description above, describe the pattern of water surplus and deficit across the UK in two clear sentences. (2 marks)

Part b: Give one implication for water supply planning in the deficit areas named on the map description. (2 marks)

- (a) Describe the pattern of water surplus and deficit across the UK shown on the simplified map. (2)
- (b) Give one implication for water supply planning in the deficit areas named on the map description. (2)

(Total for Question 9 is 4 marks)

Mark scheme · GEO.KS3 1 Global and UK Resource Supply: Food, Water and Energy Overview

Question 1

- **B1** a clear statement that resource security means reliable access to a resource such as food, water or energy, oe
- **B1** reference to sufficient quantity available, oe
- **B1** reference to acceptable quality and affordability for a population, oe
- **Answer: Resource security is reliable access to a resource such as food, water or energy, in sufficient quantity, with acceptable quality and at an affordable price for a population.**

Question 2

- **B1** one correct way, e.g. food supply supports workforce health/productivity, oe
- **B1** second correct way, e.g. energy powers industry and transport, oe
- **B1** third correct way, e.g. water is needed for sanitation and public health, oe
- **Answer: Examples: food supports health and workforce productivity; energy powers industry, heating and transport; water enables sanitation, agriculture and public health.**

Question 3

- **B1** reason stated, e.g. differences in agricultural productivity between countries, oe
- **B1** linked detail, e.g. surplus areas produce more food than needed and can export, while deficit areas cannot meet domestic demand, oe
- **B1** further linked example or explanation, e.g. climate and land availability affect productivity, oe
- **Answer: For example, differences in agricultural productivity: some countries can produce more food than they need and export (surplus), while others cannot meet domestic demand and must import (deficit); this is influenced by climate and land availability.**

Question 4

- **B1** trend 1, e.g. UK domestic fossil fuel production has generally fallen since its peak, oe
- **B1** trend 2, e.g. UK energy imports have increased to replace falling domestic supply, oe
- **B1** additional valid trend or qualifier, e.g. growth in UK renewables capacity has partly offset fossil fuel decline, oe
- **Answer: UK domestic fossil fuel production has fallen since its peak, and UK energy imports have increased to replace some of that shortfall; at the same time renewable energy capacity in the UK has grown.**

Question 5

- **B1** reason 1, e.g. changes in consumer demand for out-of-season or exotic foods, oe
- **B1** reason 2, e.g. cost advantages of importing some produce rather than producing it domestically, oe
- **B1** linked detail or additional reason, e.g. agricultural land use and climate limit domestic production of some foods, oe
- **Answer: For example, consumer demand for year-round and exotic foods has increased, and it can be cheaper to import some produce rather than producing it domestically; agricultural land use and climate also limit domestic production of some foods.**

Question 6

- **B1** one correct surplus region, e.g. north-west England, Scotland, or Wales named, oe
- **B1** one correct deficit region, e.g. south-east England named, oe
- **Answer: Water surplus region: north-west England (or Scotland or Wales); water-deficit region: south-east England.**

Question 7

- **B1** reason stated, e.g. increased consumer demand for out-of-season or exotic foods leading to more imports, oe
- **B1** linked justification, e.g. it can be cheaper or more convenient to import than to produce such foods domestically, oe
- **Answer: For example, increased consumer demand for year-round and exotic foods has led to more imports, because it is often cheaper or more convenient to import those foods than to grow them year-round in the UK.**

Question 8

- **B1** a concise definition, e.g. an area that produces more of a resource (water or energy) than it uses, oe
- **Answer: A surplus area is a region that produces more of a resource, such as water or energy, than it uses domestically.**

Question 9

- (a) **B1** north and west are described as surplus, oe
- (a) **B1** south and east are described as deficit, oe
- (a) **Answer: The map shows water surplus areas concentrated in the north and west of the UK where rainfall and river flows are higher. Water deficit areas are mainly in the south and east where rainfall is lower but demand is higher.**
- (b) **B1** implication stated, e.g. need to transfer water from surplus to deficit areas, build reservoirs or manage demand, oe
- (b) **B1** linked brief justification, e.g. to ensure reliable supply where local resources are insufficient, oe
- (b) **Answer: An implication is that planners may need to transfer water from surplus regions, build additional storage such as reservoirs, or implement stronger demand management in the south and east to ensure reliable supply where local resources are insufficient.**