



GEO.KS33 Impacts of Water Insecurity: Disease, Pollution and Conflict

AQA 8035 · Calculators not allowed · about 40 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Give one example of a waterborne disease caused by contaminated drinking water and name a typical symptom, context: low-income urban area with informal water supplies.

(Total for Question 1 is 1 mark)

- 2** Describe one direct health impact of drinking water contaminated with sewage in a rural village that relies on shallow wells.

(Total for Question 2 is 2 marks)

- 3** Give two ways that industrial pollution can harm freshwater ecosystems downstream of a factory discharge point.

(Total for Question 3 is 2 marks)

- 4** Describe how agricultural runoff containing fertiliser can lead to algal blooms in a lake, and give one environmental consequence of such blooms for fisheries.

(Total for Question 4 is 2 marks)

- 5** Give one impact of contaminated water on local education in a town that relies on informal wells and springs.

(Total for Question 5 is 1 mark)

- 6** Explain one economic impact on local businesses when a coastal resort is affected by river pollution that discolours water and creates odour, context: small seaside town dependent on day-trip tourism.

(Total for Question 6 is 2 marks)

- 7** Describe two social impacts on communities of long-term freshwater pollution from sewage and industrial waste, context: a mid-sized inland town relying on the river for bathing, washing and local food.

(Total for Question 7 is 4 marks)

- 8** Explain two impacts of international competition over shared river water on relations between neighbouring countries, context: tensions linked to the Indus Waters Treaty disputes between India and Pakistan are a named example you may use.

(Total for Question 8 is 4 marks)

- 9** Explain the impacts of water insecurity on people and the environment. You should refer to waterborne disease, pollution and international competition where relevant in your answer.
- Explain the impacts of water insecurity on people and the environment, referring to waterborne disease, pollution and international competition where relevant.

(Total for Question 9 is 6 marks)

Mark scheme · GEO.KS33 Impacts of Water Insecurity: Disease, Pollution and Conflict

Question 1

- **B1** one named disease and one typical symptom, e.g. cholera, severe watery diarrhoea
- **Answer: Cholera, symptom: severe watery diarrhoea.**

Question 2

- **B1** identification of a health impact, e.g. increased diarrhoeal disease or typhoid outbreaks
- **B1** linked detail explaining consequence, e.g. diarrhoea causes dehydration and malnutrition, increasing child mortality or long-term ill health
- **Answer: Contaminated well water can cause diarrhoeal disease outbreaks, leading to dehydration and malnutrition which can increase child mortality and long-term health problems.**

Question 3

- **B1** first valid way, e.g. toxic chemicals kill fish and invertebrates
- **B1** second valid way, e.g. pollutants bioaccumulate in food chains or cause habitat degradation reducing biodiversity
- **Answer: Toxic chemicals can kill fish and aquatic invertebrates; pollutants can bioaccumulate in food chains or degrade habitats, reducing biodiversity.**

Question 4

- **B1** description of process, e.g. fertiliser nutrients (nitrate and phosphate) enter water causing rapid algal growth (eutrophication)
- **B1** environmental consequence for fisheries, e.g. algae decay uses up oxygen causing fish kills and reduced catches
- **Answer: Fertiliser nutrients washed into the lake cause rapid algal growth (eutrophication); when algae die and decompose they use oxygen, causing fish kills and reduced fish catches.**

Question 5

- **B1** one impact on education, e.g. increased pupil absenteeism due to waterborne illness
- **Answer: Increased pupil absenteeism because children are frequently ill from waterborne diseases.**

Question 6

- **B1** identification of economic impact, e.g. drop in visitor numbers or cancellations
- **B1** linked explanation, e.g. fewer tourists reduce revenue for hotels, cafes and shops, leading to loss of income and potential job losses in the local economy
- **Answer: A visible and smelly polluted river deters visitors, causing a drop in day-trip tourists; this reduces revenue for cafes, shops and boat operators and can lead to staff being laid off and lower local income.**

Question 7

- **B1** first social impact identified, e.g. increased illness among residents who use the river for washing or bathing
- **B1** linked detail for first impact, e.g. recurring illnesses reduce quality of life and can place a burden on family carers and local health services
- **B1** second social impact identified, e.g. loss of cultural or recreational use of the river, such as loss of swimming spots or festivals
- **B1** linked detail for second impact, e.g. this damages community cohesion and local traditions and can reduce mental wellbeing
- **Answer: For example, polluted river water causes recurring illnesses among people who bathe or wash in it, reducing quality of life and increasing pressure on carers and health services; and pollution can end cultural and recreational uses of the river, such as swimming and local festivals, harming community cohesion and mental wellbeing.**

Question 8

- **B1** first impact identified, e.g. diplomatic tension and reduced cooperation over other issues
- **B1** linked explanation, e.g. disputes over water sharing can lead to breakdowns in talks, reducing trust and hampering joint projects such as flood management or trade
- **B1** second impact identified, e.g. risk of escalation to economic sanctions or military posturing
- **B1** linked explanation, e.g. a downstream country feeling deprived of water may impose restrictions on cross-border trade, or upstream infrastructure projects may be seen as strategic threats, increasing regional instability
- **Answer: For example, competition over river water can cause diplomatic tensions and reduce cooperation, so countries are less likely to work together on flood control or cross-border projects; it can also escalate to economic sanctions or military posturing, as an upstream dam or withdrawal may be viewed as a strategic threat, increasing regional instability, as seen in periodic disputes related to the Indus Waters Treaty between India and Pakistan.**

Question 9

- **Level 1** (1-2): Basic statements about impacts of water insecurity, with limited development, for example naming one effect such as illness or reduced fish catches.
- **Level 2** (3-4): Developed explanation of several impacts, covering at least two areas such as health and environment, with some linkage between cause and effect, for example explaining how contaminated water causes disease and how pollution reduces aquatic biodiversity.
- **Level 3** (5-6): Detailed, well-developed explanation that links multiple impacts across people and the environment, for example clear chains linking contaminated supplies to health outcomes, economic and educational consequences, ecological degradation from pollutants and the wider political impacts of international competition, with specific examples or clear detail.
- **Indicative content:**
 - Waterborne disease, e.g. cholera or typhoid from contaminated drinking water, causes dehydration, high mortality among vulnerable groups, pressure on health services and loss of labour productivity.
 - Pollution impacts, e.g. industrial or sewage discharge and agricultural runoff causing eutrophication, reduce fish stocks and biodiversity, harm livelihoods that depend on fishing and food security, and can render water unsafe for domestic uses.
 - Social and economic consequences, e.g. illness increases school absenteeism, reduces workforce participation, increases healthcare costs and can push households into poverty.
 - Environmental chains, e.g. algal blooms from nutrient enrichment lead to oxygen depletion, fish kills and long-term habitat degradation, affecting ecosystem services such as water purification and fisheries.
 - Political and international impacts, e.g. competition over shared rivers can reduce cooperation, provoke diplomatic disputes and risk economic or security tensions, as illustrated by disputes around the Indus Waters Treaty between India and Pakistan.
 - A strong answer will link examples across these categories, showing how health, economic, environmental and political impacts interact and amplify overall harm.