



GEO.HU11 Impacts of Water Insecurity and Conflict Over Shared Rivers

Total Marks

AQA 8035 • Calculators not allowed • about 50 minutes

Name: _____ Date: ____ / ____ / ____

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Answer ALL questions. Show all your working.

- 1** Define 'water insecurity' in the context of a river basin supplying people and agriculture.

(Total for Question 1 is 1 mark)

- 2** State one health consequence of water insecurity in urban areas such as informal settlements near a river.

(Total for Question 2 is 1 mark)

- 3** Describe how contaminated river water can lead to increased rates of diarrhoeal illness in a riverside town.

(Total for Question 3 is 2 marks)

- 4** Give TWO consequences of water insecurity for agriculture in a rural river basin.

(Total for Question 4 is 2 marks)

- 5** Explain ONE way that water insecurity can increase household expenditure and reduce disposable income in a small town that relies on a river.

(Total for Question 5 is 3 marks)

- 6** State one economic cost to industry caused by poor river water quality in an industrial town.

(Total for Question 6 is 1 mark)

- 7** Describe how reduced river flow downstream of an upstream abstraction can affect water quality for users downstream.

(Total for Question 7 is 2 marks)

- 8** Give TWO ways local governments can be economically affected by chronic water insecurity in a river basin.

(Total for Question 8 is 3 marks)

- 9** State one public health intervention that reduces waterborne disease risk when a river becomes contaminated.

(Total for Question 9 is 1 mark)

- 10** Explain ONE way that chronic water insecurity can affect school attendance in a riverside community.

(Total for Question 10 is 2 marks)

- 11** Give TWO social consequences of water insecurity for women and girls in a rural river-basin community.

(Total for Question 11 is 3 marks)

- 12** Describe ONE environmental consequence for river ecosystems when upstream water extraction increases greatly.

(Total for Question 12 is 2 marks)

- 13** The next two questions focus on the Nile basin dispute involving Egypt, Ethiopia and Sudan and the Grand Ethiopian Renaissance Dam (GERD). Use named country facts in your answers. Describe TWO political concerns Egypt has about the GERD upstream in Ethiopia.

(Total for Question 13 is 6 marks)

- 14** Explain THREE reasons why disputes over shared rivers like the Nile can escalate into interstate tension or conflict.

(Total for Question 14 is 5 marks)

- 15** Use the case of the Nile basin and any other examples you know to answer this question.

'Economic interdependence and diplomacy make violent conflict over shared rivers unlikely.'
Evaluate the extent to which you agree with this statement.

(Total for Question 15 is 8 marks)

Mark scheme · GEO.HU11 Impacts of Water Insecurity and Conflict Over Shared Rivers

Question 1

- **B1** lack of reliable, sufficient or safe access to water for people and for agriculture within a basin, oe
- **Answer: Lack of reliable, sufficient or safe access to water for people and for agriculture within a river basin.**

Question 2

- **B1** waterborne disease outbreak, e.g. cholera or diarrhoeal illness
- **Answer: An outbreak of waterborne disease, for example cholera or diarrhoeal illness.**

Question 3

- **B1** contaminated water contains pathogens from sewage or animal waste, oe
- **B1** people drinking or using that water become infected, increasing diarrhoeal illness rates, oe
- **Answer: Contaminated river water can contain pathogens from sewage or animal waste, and when people drink or use that water they become infected, increasing rates of diarrhoeal illness.**

Question 4

- **B1** reduced crop yields due to insufficient irrigation or poor water quality
- **B1** loss of livestock or reduced productivity from lack of clean drinking water for animals
- **Answer: Reduced crop yields from insufficient irrigation or poor water quality; and loss of livestock or reduced productivity because animals lack clean drinking water.**

Question 5

- **B1** households may need to buy bottled or tanker-supplied water when river supplies are unsafe or unreliable, oe
- **B1** this increases regular household spending, leaving less money for food, education or health, oe
- **B1** linked example or consequence, e.g. poorer families become more vulnerable economically and socially, oe
- **Answer: Households may have to buy bottled or tanker-supplied water when river supplies are unsafe or unreliable; this raises regular spending, leaving less money for food, education or health, which increases economic vulnerability.**

Question 6

- **B1** increased treatment costs or production shutdowns due to water contamination
- **Answer: Increased treatment costs or production shutdowns due to water contamination.**

Question 7

- **B1** reduced flow means less dilution of pollutants, so concentrations of contaminants rise, oe
- **B1** this makes water harder to treat and increases health risks for downstream users, oe
- **Answer: Reduced flow means there is less dilution of pollutants, so concentrations of contaminants rise; this makes water harder to treat and increases health risks for downstream users.**

Question 8

- **B1** increased public spending on emergency water supplies or treatment works, oe
- **B1** loss of business rates or reduced economic activity if industry or agriculture decline, oe
- **B1** reduced tax revenue and higher welfare costs as households become poorer, oe
- **Answer: Increased public spending on emergency water supplies or treatment works; loss of business rates or reduced economic activity if industry or agriculture decline; and reduced tax revenue with higher welfare costs as households become poorer.**

Question 9

- **B1** chlorination or other treatment of drinking water supplies
- **Answer: Chlorination or other treatment of drinking water supplies.**

Question 10

- **B1** children may be kept home to collect water from distant or safe sources, reducing time for schooling, oe
- **B1** or illness from contaminated water can cause absenteeism, oe
- **Answer: Children may be kept home to collect water from distant or safe sources, reducing time for schooling; alternatively, illness from contaminated water can cause pupils to miss school.**

Question 11

- **B1** increased time spent collecting water, reducing time for education or paid work
- **B1** greater exposure to safety risks when travelling to distant water sources, oe
- **B1** reduced dignity and privacy where sanitation and water for hygiene are lacking, oe
- **Answer: Increased time spent collecting water, reducing time for education or paid work; greater exposure to safety risks when travelling to distant water sources; and reduced dignity and privacy where sanitation and water for hygiene are lacking.**

Question 12

- **B1** reduced habitat area and lower flows harming fish and invertebrate populations, oe
- **B1** linked detail, e.g. wetlands and riparian vegetation can dry out, reducing biodiversity, oe
- **Answer: Reduced habitat area and lower flows harming fish and invertebrate populations; wetlands and riparian vegetation can dry out, reducing biodiversity.**

Question 13

- **B1** concern 1, e.g. reduced Nile flow affecting Egypt's water supply for population and irrigation, oe
- **B1** linked detail, e.g. Egypt relies on the Nile for over 90% of its freshwater needs historically, oe
- **B1** concern 2, e.g. control over timing and volume of releases from GERD affecting downstream agriculture and power generation in Sudan and Egypt, oe
- **B1** linked detail, e.g. sudden releases or prolonged filling periods could damage crops or reservoirs downstream, oe
- **B1** concern 3, e.g. long-term changes to sediment flow and river ecology that could harm agriculture and fisheries in Egypt, oe
- **B1** linked detail, e.g. sediment trapped by a large dam reduces nutrient-rich silt reaching downstream floodplain soils, oe
- **Answer: Egypt is concerned that GERD could reduce Nile flow affecting its water supply for people and irrigation (Egypt historically relies on the Nile for the vast majority of its freshwater); it is also concerned that control over timing and volume of releases could harm downstream agriculture and power generation in Sudan and Egypt, and that the dam could trap sediment, changing river ecology and reducing nutrient-rich silt reaching downstream soils.**

Question 14

- **B1** resource scarcity creates strong national interest, e.g. water is essential for drinking and irrigation, increasing stakes and willingness to act, oe
- **B1** asymmetric power and dependency, e.g. downstream countries may be much more dependent on the river so feel existentially threatened by upstream development, oe
- **B1** lack of effective legal agreements or mistrust, e.g. absence of a binding treaty on water sharing increases uncertainty and competition, oe
- **B1** political leaders may use water disputes to gain domestic support or distract from internal problems, raising rhetoric and tension, oe
- **B1** inability to resolve technical issues like filling schedules and drought management can lead to repeated crises and brinkmanship, oe
- **Answer: Disputes escalate because water scarcity raises the national stakes and willingness to act; asymmetric dependency makes downstream states feel existentially threatened by upstream projects; the absence of binding agreements and mistrust increases uncertainty and competition; political leaders may use the dispute to gain domestic support, raising rhetoric; and inability to agree on technical issues like filling schedules can lead to repeated crises and brinkmanship.**

Question 15

- **Level 4** (7-8): A thorough, well-balanced evaluation that uses accurate named examples (e.g. the Nile basin and GERD, other transboundary rivers), weighs evidence that economic interdependence and diplomacy reduce incentives for violence against counter-evidence such as power asymmetry, historical grievances and failed diplomacy, and reaches a justified, clear conclusion on the extent to which violent conflict is unlikely.
- **Level 3** (5-6): A clear evaluation that considers both sides with relevant examples; the argument is reasoned and a conclusion is given, though some points may be less developed or supported.
- **Level 2** (3-4): Some relevant points about how economic links and diplomacy can prevent conflict are made, or some counter-arguments are given, but the analysis is limited and the conclusion is generalised.
- **Level 1** (1-2): One or two simple, relevant points are made with little development or no clear conclusion.
- **Level 0** (0): No relevant content.
- **Indicative content:**
 - Arguments agreeing with the statement: economic interdependence creates mutual costs to conflict, for example shared water infrastructure and cross-border trade make states prefer negotiation; dams like GERD offer potential for regional electricity trade which creates incentives for cooperation.
 - Diplomacy and institutions can provide mechanisms for dispute resolution, e.g. negotiations, technical committees and mediation reduce the risk of unilateral violent action.
 - Arguments challenging the statement: where vital resources are scarce, states may accept high costs to secure supplies, especially if one state is highly dependent; downstream states like Egypt may feel existentially threatened and resort to coercive measures if diplomacy fails.
 - Power asymmetry matters: a militarily stronger state can impose outcomes or threaten force, while weaker states may take risky actions to secure their needs.
 - History and national identity can inflame disputes, with leaders using nationalist rhetoric and domestic politics making compromise difficult.
 - Case-study detail: in the Nile basin, prolonged negotiation over GERD illustrates both diplomacy and ongoing tension; agreements on filling and drought management remain contentious, showing diplomacy reduces but does not remove the risk.
 - A balanced conclusion weighs that economic interdependence and diplomacy lower the probability of violent conflict, but do not make it impossible where dependency, mistrust, weak institutions or acute scarcity persist.