



**Question 1** (2 marks)

Watch the video below and answer the question that follows.

[Video](#)

[Transcript](#)

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The Indo-Australian and Eurasian plates under the Indian Ocean have been pushing against each other for centuries.

On the 26th of December 2004, 30 kilometres below the ocean's surface, the forces reached breaking point and the fault started to rupture. This caused the water to move out as a series of giant ripples. This is known as a tsunami.

The tsunami wave that hit Banda Aceh in Indonesia was 30 metres high.

It hit the coast with the force of sixty hurricanes, destroying 100 000 houses and one third of critical infrastructure along the coast in Banda Aceh. This forced many people to leave their home in search of safety.

The impact was not only felt in Indonesia. It was also felt in coastal cities of multiple countries worldwide.

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**Source A**

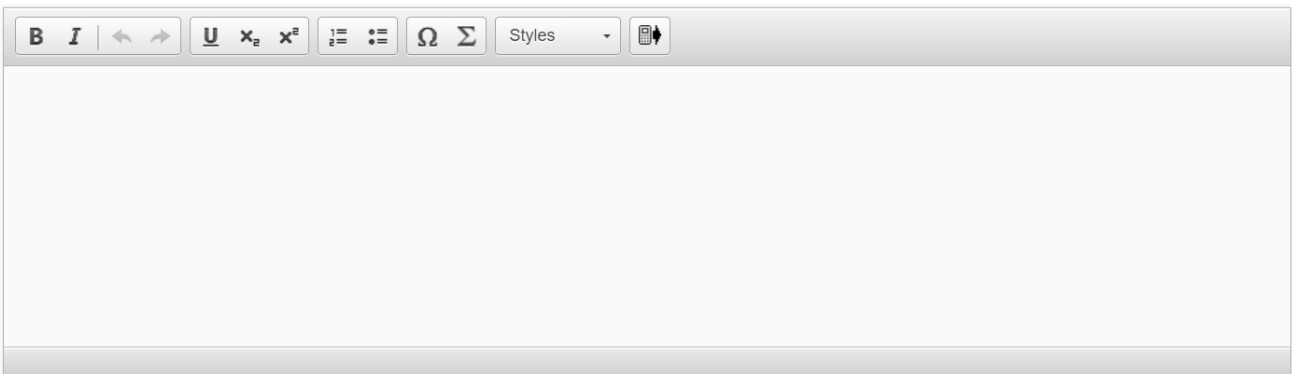
Use the slider to view the impact of the 2004 tsunami in Banda Aceh, Indonesia.

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Scroll down to continue

**State two** impacts of the 2004 tsunami in Indonesia.



A rich text editor toolbar with the following icons from left to right: Bold (B), Italic (I), Undo (left arrow), Redo (right arrow), Underline (U), Subscript (x<sub>2</sub>), Superscript (x<sup>2</sup>), Bulleted List (three horizontal lines with a dot), Numbered List (three horizontal lines with numbers), Link (Ω), Unlink (Σ), Styles (a dropdown menu labeled 'Styles'), and Mobile View (a smartphone icon).

Question 2 (4 marks)

**Explain** how disparities in income can worsen the impacts of **one** natural disaster.

**B** *I* | ← → | U  $x_2$   $x^2$  | ☰ ☱ | Ω Σ | Styles - | 📱



**Question 3** (8 marks)

Following the tsunami in 2004, a non-governmental organization (NGO) called Tsunami Response Indonesia carried out an investigation into the impacts of the tsunami. They produced a map using the action plan below. Click on the tab to show the map.

You will evaluate their investigation.

**Action Plan**

Projects

Map



www.tri.org/projects



Tsunami Response Indonesia



## Indonesia 2004

Our team set out to analyse the movement of people following the tsunami. Below is the methodology we used for this investigation.

**Statement of inquiry:** Place and space determine the impact of natural disasters on communities.

**Research question:** How did the 2004 tsunami impact the movement of people within Aceh Province, Indonesia?

The goal is to use mobile data to track the movement of people following the December 26<sup>th</sup>, 2004 tsunami in Indonesia and to create a map to show the results.

**Statement of inquiry:** Place and space determine the impact of natural disasters on communities.

**Research question:** How did the 2004 tsunami impact the movement of people within Aceh Province, Indonesia?

The goal is to use mobile data to track the movement of people following the December 26<sup>th</sup>, 2004 tsunami in Indonesia and to create a map to show the results.

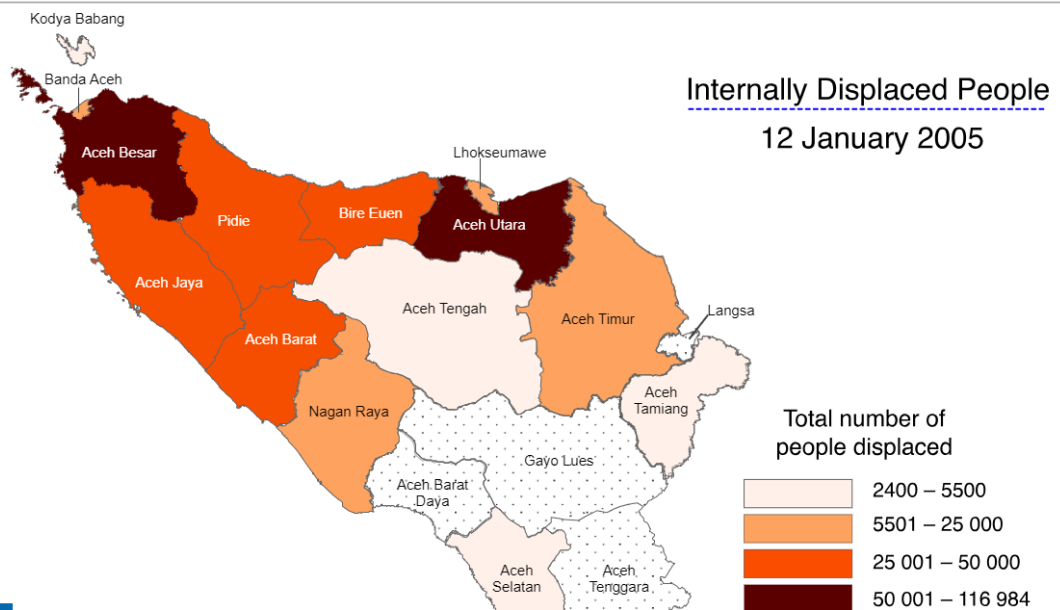
**Methodology:**

- The location of a person can be determined by where they are when they make a call
- Use mobile phones to work out where people are located when they use their phones
- Track the location of 1.9 million mobile phones – this is approximately half of the population of the Aceh Province
- Timeframe for data collection: December 27<sup>th</sup>, 2004 – January 12<sup>th</sup>, 2005

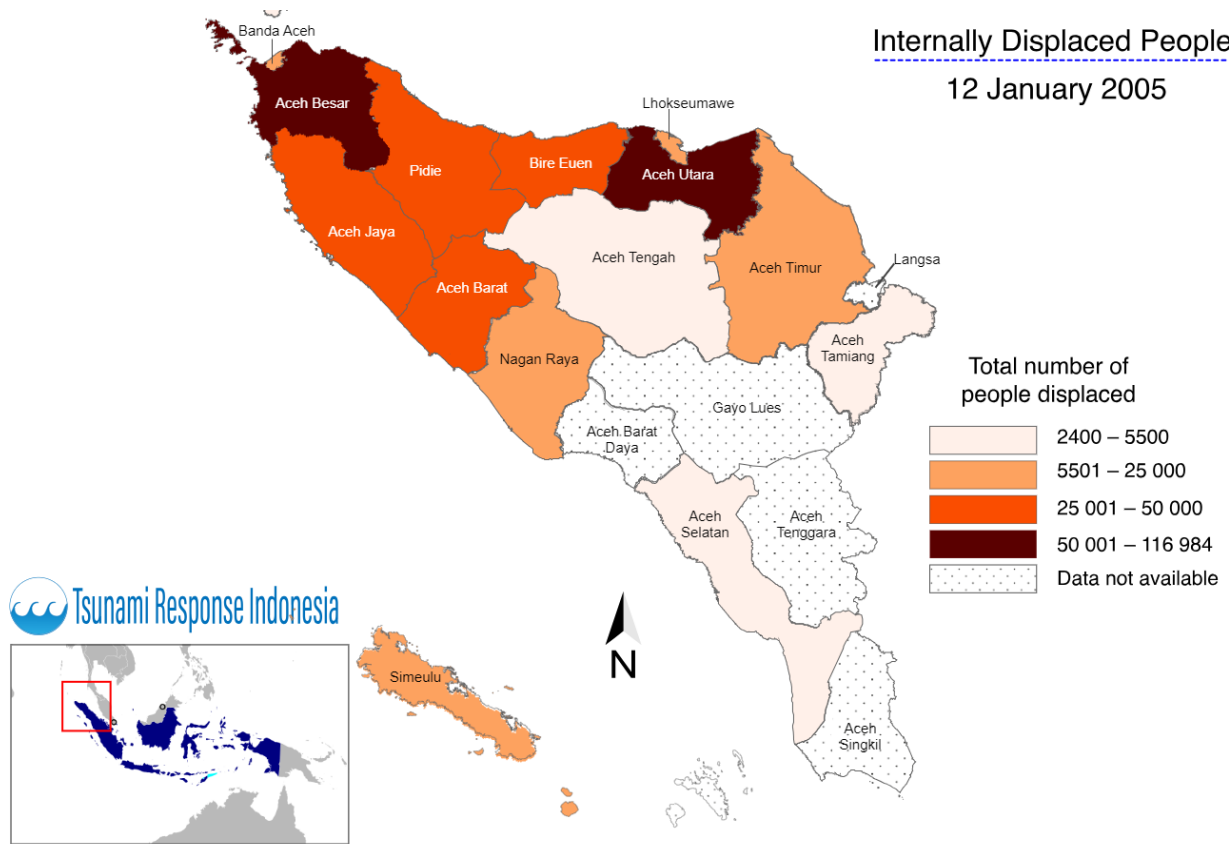
**Evaluate** the investigation carried out by the NGO.



The map below shows the movement of people in the weeks after the tsunami in the Aceh Province of Indonesia.



Internally Displaced People  
12 January 2005



Not Started  
Question 4 (12 marks)

Question 4a (2 marks)

A non-governmental organization (NGO) has asked you to investigate the strategies used to manage a natural disaster. The investigation will allow the NGO to evaluate the effectiveness of strategies in different locations.

The statement of inquiry is: *Time, place and space can influence the effectiveness of a community's response to natural disasters.*

With reference to the statement of inquiry, **formulate** a clear and focused research question for your investigation.

**B I** | ← → |  x<sub>2</sub> x<sup>2</sup> | ☰ ☷ | Ω Σ | Styles ▾ | 📱



**Question 4b** (4 marks)

**Justify** why your research question will help the NGO to achieve their goal.

**B** *I* | ← → |    $x_2$   $x^2$  |  $\equiv$   $\equiv$  |  $\Omega$   $\Sigma$  | Styles ▾ |





**Question 4c** (2 marks)

**List two** methods of collecting primary data that you could use to answer the research question you formulated in part (a).

**B** *I* | ← → |  x<sub>2</sub> x<sup>2</sup> | ☰ ☷ | Ω Σ | Styles ▾ | 📱



**Question 4d** (4 marks)

**Explain** why **one** of the primary data sources in 4(c) would help your investigation.

**B** **I** | ← → **U**  $x_2$   $x^2$   $\frac{1}{x}$   $\frac{1}{x^2}$   $\Omega$   $\Sigma$  Styles

Wiris Editor

Question 5 (18 marks)

You are a popular travel blogger who has many online followers.

You decide to write a blog post to **explain** the positive **and** negative impacts of tourism on the culture of **one** community.

In your blog post, you **must**:

- include a relevant title and sub-headings
- explain **at least one** positive **and at least one** negative impact of tourism on the culture of one community
- conclude with advice for future travellers.



©

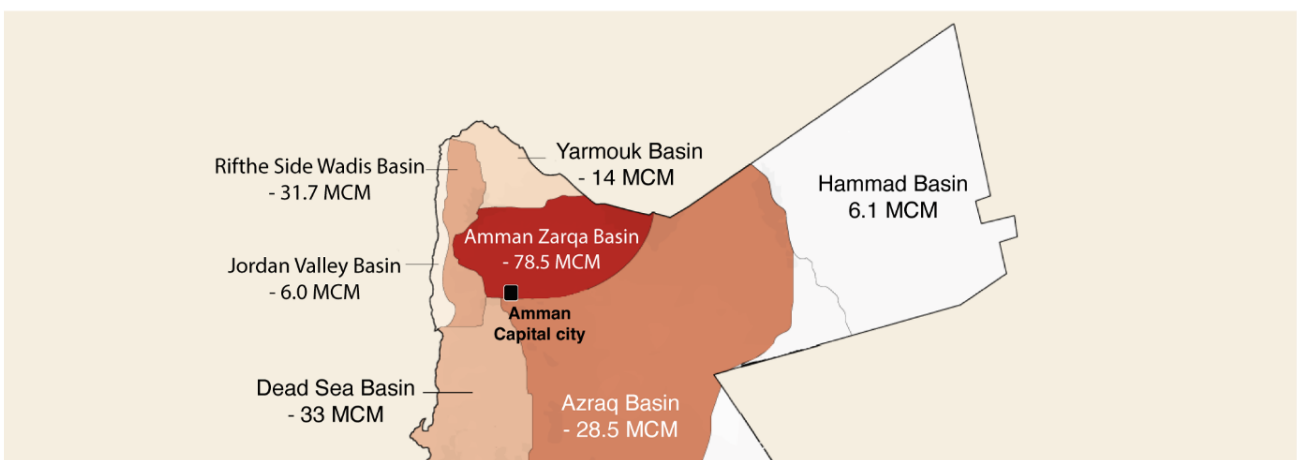
**B** **I** | ← → |   ×<sub>2</sub> ×<sup>2</sup> | ☰ ☱ | Ω Σ | Styles - | 📄 ↕

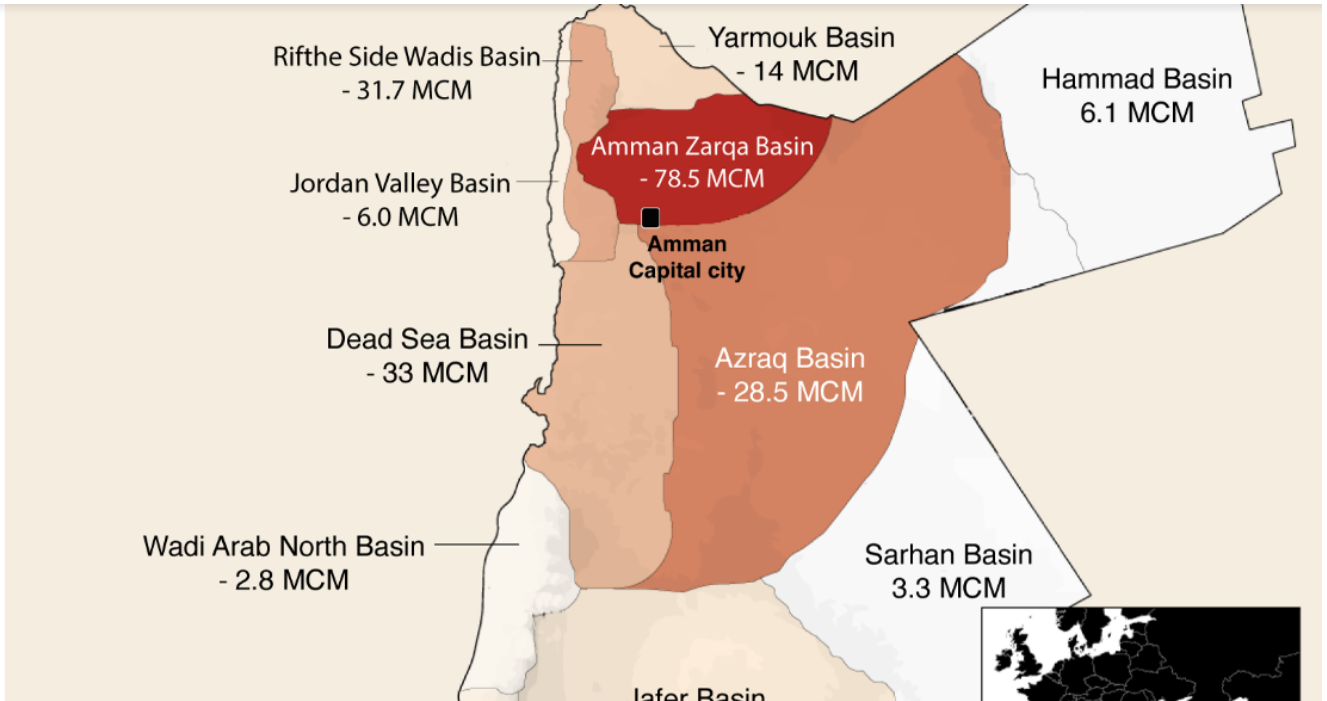
**Question 6** (6 marks)

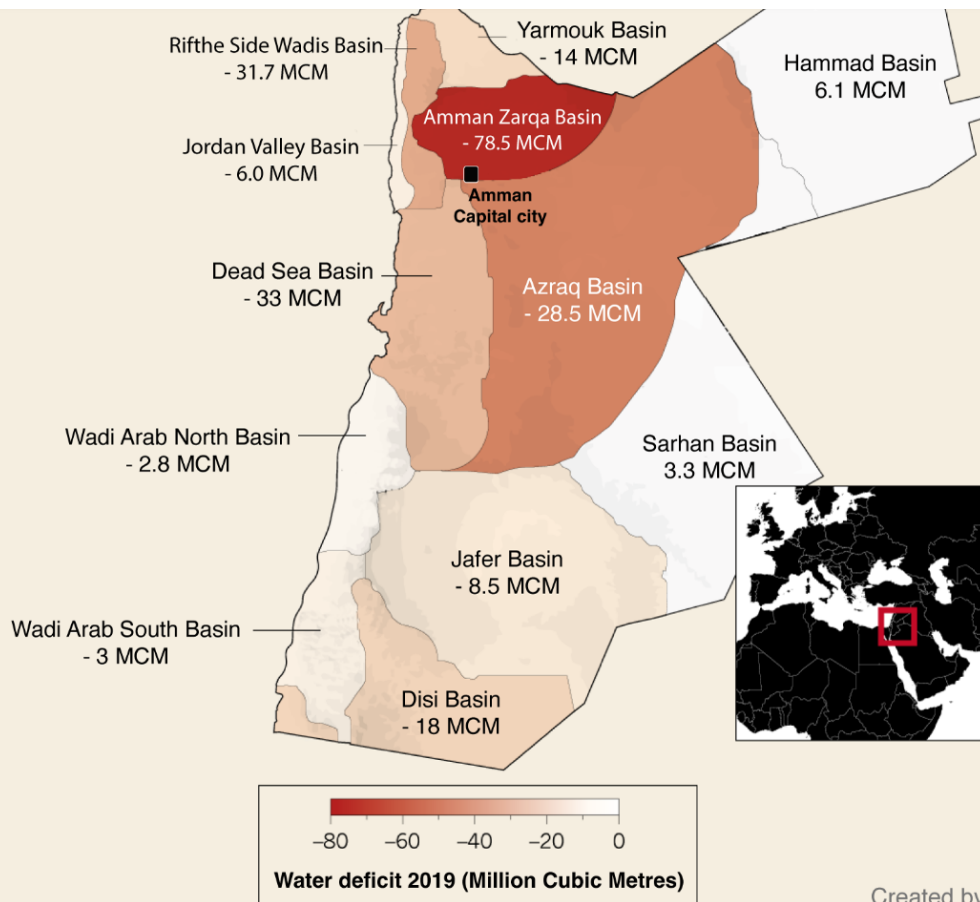
Jordan is a country in the Middle East. It does not have enough fresh water to meet the needs of its population. Jordan extracts 46 % of its water from groundwater sources.

**Source B** shows the location of groundwater basins and the extraction rates of water. The water deficit is a negative if the amount of extracted water exceeds the sustainable amount.

**Source B**







Created by [www.allthatwater.org](http://www.allthatwater.org)



**Question 6a** (1 mark)

**Select** the correct answer to complete the sentence below.

Jordan's water extraction is sustainable in the  basins.

Select

Dead Sea and Jordan Valley

Hammad and Sarhan

Jafer and Azraq



**Question 6b** (1 mark)

**State** the origin of **Source B**.

**B** *I* | ← → |    $x_2$   $x^2$  |  $\frac{1}{x}$   $\frac{1}{x^2}$  |  $\Omega$   $\Sigma$  | Styles - |



Question 6c (4 marks)

**Explain one** value of **Source B** to an MYP student investigating groundwater extraction in Jordan.

**B** *I* ← → U  $x_2$   $x^2$   $\ddot{=}$   $\equiv$   $\Omega$   $\Sigma$  Styles





**Question 7** (4 marks)

The government of Jordan is investigating ways to sustainably provide fresh water in Jordan. They plan to increase the amount of fresh water through desalinization.

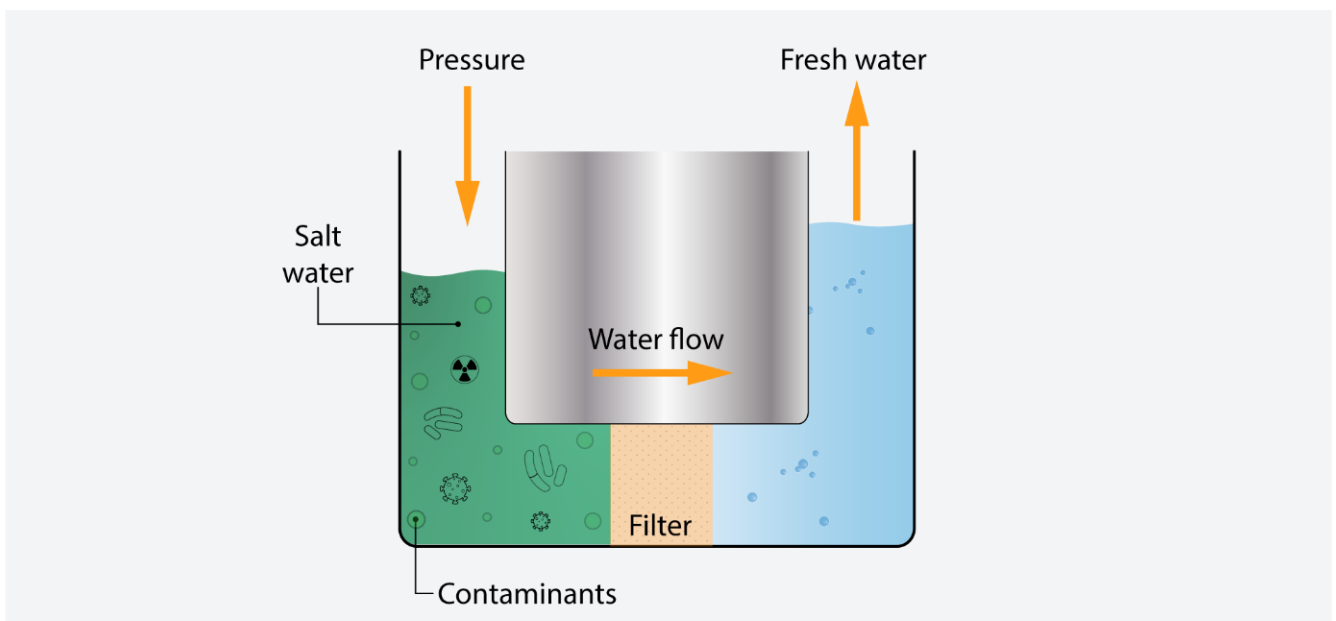
**Source C** shows one way that desalinization works.

**Source C**

The process uses a filter that only allows water particles through, separating the water from salt and contaminants.

**Desalinization**

## Desalination



One resident of Jordan was interviewed about the government's plan to invest in desalination. Their perspective is given below.

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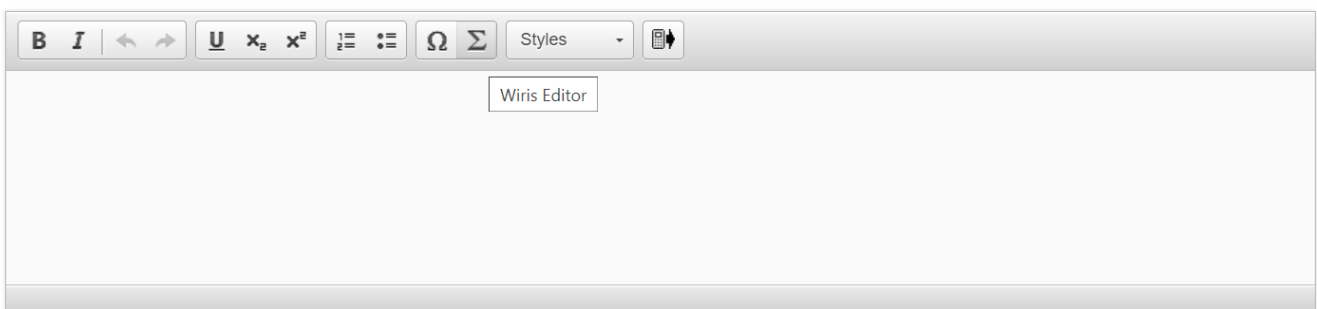
“What do you think about the government’s plans to provide more fresh water to the nation through desalination?”



“The energy needed for desalination is too high. We would spend too much money to only get a small amount of water – it isn’t worth it! Climate change is already affecting us here in Jordan! The use of natural gas and other fossil fuels to run the desalination process will contribute more greenhouse gases to the environment. This will make our situation worse, not just now but in the future too. We must *definitely* look at other sources of water to meet our needs.”



**Justify** why another resident of Jordan might disagree with this perspective.



The image shows a screenshot of a Wiris Editor interface. At the top, there is a toolbar with the following icons from left to right: a bold 'B' icon, an italic 'I' icon, left and right arrow icons, an underline 'U' icon, a text color icon (represented by a small 'x' and a color swatch), a background color icon (represented by a small 'x' and a color swatch), a list icon (three horizontal lines), a link icon (a chain link), an unlink icon (a chain link with a slash), a link icon (the Greek letter Omega  $\Omega$ ), a link icon (the Greek letter Sigma  $\Sigma$ ), a 'Styles' dropdown menu, and a mobile device icon. Below the toolbar, the text 'Wiris Editor' is centered in a small box. The main editing area is a large, empty white rectangle.



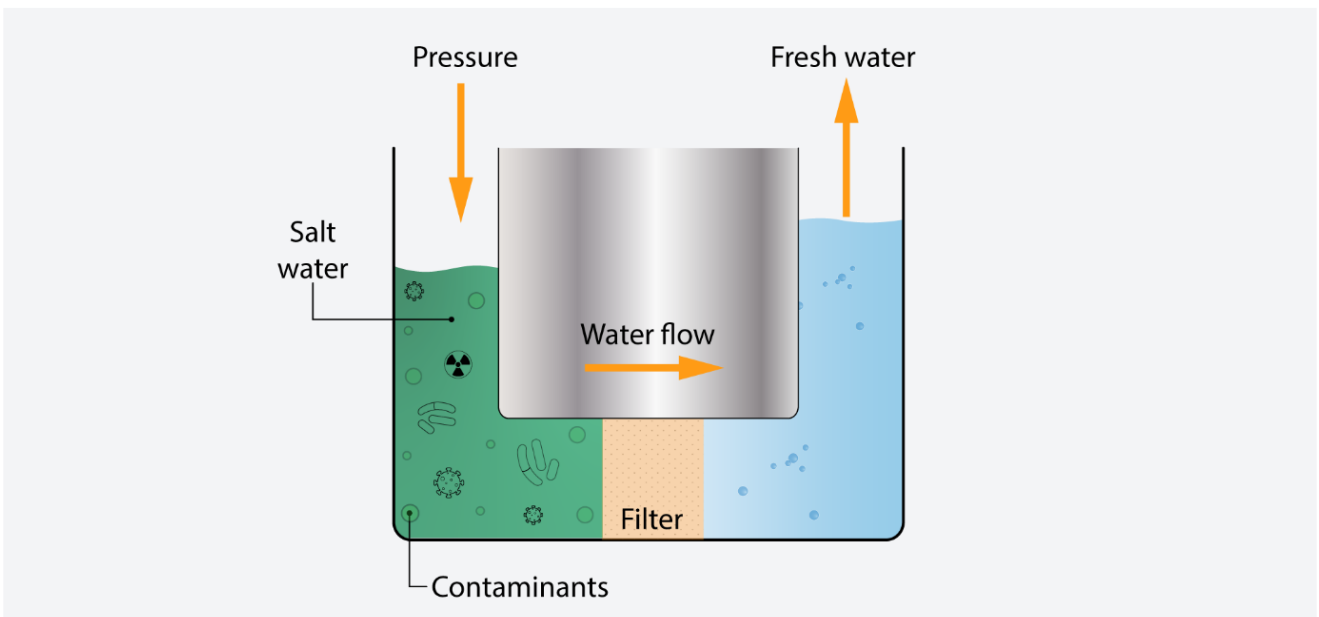
**Question 8** (2 marks)



**Source C** is repeated below to help you answer the question that follows.

**Source C**

The process uses a filter that only allows water particles through, separating the water from salt and contaminants.



**Outline one** limitation of **Source C** to a resident of Jordan who is learning about the government's proposal to invest in desalination.

Rich text editor toolbar with icons for Bold (B), Italic (I), Undo, Redo, Underline (U), Subscript (x<sub>2</sub>), Superscript (x<sup>2</sup>), Bulleted List, Numbered List, Link (Ω), Unlink (Σ), Styles dropdown, and a mobile device icon.



Question 9 (24 marks)

A report by the United Nations found that the extraction and processing of minerals is responsible for more than 80 % of the world's biodiversity loss.

**To what extent** is the sustainable extraction of resources essential for reducing biodiversity loss?

In a well-structured essay, you **must**:

- include explanations and examples to support your arguments
- consider different perspectives.

**B** *I* | ← → | U  $x_2$   $x^2$  |  $\int$   $\sum$  |  $\Omega$   $\Sigma$  | Styles |