

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

**Pearson Edexcel  
International GCSE (9–1)**

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# **Tuesday 21 May 2019**

Afternoon (Time: 1 hour 10 minutes)

Paper Reference **4GE1/01**

## **Geography**

### **Paper 1: Physical Geography**

**You must have:**

Resource Booklet (enclosed), calculator

Total Marks

#### **Instructions**

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A, answer **two** questions from Questions 1, 2 **and** 3.
- In Section B, answer **one** question from Questions 4, 5 **and** 6.
- Answer the questions in the spaces provided
  - *there may be more space than you need.*
- Calculators may be used.
- Where asked you must **show all your working out with your answer clearly identified** at the **end of your solution**.

#### **Information**

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  - *use this as a guide as to how much time to spend on each question.*

#### **Advice**

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

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**SECTION A****Answer TWO questions from this section.****Some questions must be answered with a cross in a box . If you change your mind about an answer, put a line through the box  and then mark your new answer with a cross .****If you answer Question 1 put a cross in the box  .****1 River Environments.**

(a) Identify the statement below that best describes the channel in the lower course of a river.

(1)

<input type="checkbox"/>	<b>A</b> small and fast river channel
<input checked="" type="checkbox"/>	<b>B</b> wide and deep river channel
<input type="checkbox"/>	<b>C</b> narrow and fast river channel
<input checked="" type="checkbox"/>	<b>D</b> small and narrow river channel

(b) (i) Identify **one** process of river erosion.

(1)

<input type="checkbox"/>	<b>A</b> levees
<input type="checkbox"/>	<b>B</b> abrasion
<input checked="" type="checkbox"/>	<b>C</b> overland flow
<input type="checkbox"/>	<b>D</b> discharge

(ii) State **one** process of river transportation.

(1)

(iii) Explain **one** way water is stored in the hydrological cycle.

(2)



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(c) Study Figure 1a in the Resource Booklet.

Suggest **two** ways people manage water supply.

(4)

1

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2

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(d) Explain **one** way vegetation can affect river discharge.

(3)

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3

Turn over ►

(e) Study Figure 1b in the Resource Booklet.

Identify the river landform.

(1)

(f) Explain the formation of a river meander.

(4)

(g) Study Figure 1c and Figure 1d in the Resource Booklet.

Analyse the reasons for variations in water quality.

(8)



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**(Total for Question 1 = 25 marks)**



If you answer Question 2 put a cross in the box  .

## 2 Coastal Environments.

(a) Identify the statement below that best describes the characteristics of a destructive wave.

(1)

<input type="checkbox"/>	<b>A</b> long wavelength and weak backwash
<input type="checkbox"/>	<b>B</b> short wavelength and strong backwash
<input type="checkbox"/>	<b>C</b> long wavelength and strong backwash
<input type="checkbox"/>	<b>D</b> short wavelength and weak backwash

(b) (i) Identify **one** erosional landform.

(1)

<input type="checkbox"/>	<b>A</b> spit
<input type="checkbox"/>	<b>B</b> cave
<input type="checkbox"/>	<b>C</b> bar
<input type="checkbox"/>	<b>D</b> beach

(ii) State **one** type of mass movement that affects coastal landscapes.

(1)

(iii) Explain **one** type of mechanical weathering that occurs at the coast.

(2)



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(c) Study Figure 2a in the Resource Booklet.

Suggest **two** ways changes in sea level have created coastal landforms.

(4)

1

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2

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(d) Explain **one** physical factor that influences the distribution of mangrove ecosystems.

(3)

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(e) Study Figure 2b in the Resource Booklet.

Identify the coastal landform at X.

(1)

(f) Explain the formation of a headland.

(4)

(g) Study Figure 2c and Figure 2d in the Resource Booklet.

Analyse the reasons for the choice of different soft engineering strategies shown.

(8)



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**(Total for Question 2 = 25 marks)**



If you answer Question 3 put a cross in the box  .

### 3 Hazardous Environments.

(a) Identify the statement below that best describes the epicentre of an earthquake.

(1)

<input type="checkbox"/>	<b>A</b> the area around the earthquake on the surface
<input type="checkbox"/>	<b>B</b> the point on the Earth's surface directly above the focus
<input type="checkbox"/>	<b>C</b> the area around the earthquake underground
<input type="checkbox"/>	<b>D</b> the location underground where the earthquake occurs

(b) (i) State **one** measure of earthquake intensity.

(1)

(ii) State **one** characteristic of a volcanic eruption.

(1)

(iii) Explain **one** cause of an earthquake event.

(2)



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(c) Study Figure 3a in the Resource Booklet.

Suggest a factor that influences the cause and another factor that influences the direction of tropical cyclones.

(4)

Cause:

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Direction:

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(d) Explain **one** way earthquakes can form tsunamis.

(3)

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(e) Study Figure 3b in the Resource Booklet.

Identify **one** feature of this building that makes it more tsunami resistant.

(1)

(f) Explain why some countries are more vulnerable than others to the impacts of natural hazards.

(4)

(g) Study Figure 3c and Figure 3d in the Resource Booklet.

Analyse the use of hazard, vulnerability and risk mapping in reducing the impact of earthquakes.

(8)



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**(Total for Question 3 = 25 marks)**

**TOTAL FOR SECTION A = 50 MARKS**



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## SECTION B

### Geographical Enquiry

Answer ONE question from this section.

Some questions must be answered with a cross in a box . If you change your mind about an answer, put a line through the box  and then mark your new answer with a cross .

If you answer Question 4 put a cross in the box  .

#### 4 Investigating River Environments.

A group of students have undertaken a study exploring changes in a river channel every 100 metres.

(a) (i) Identify the type of sampling method used.

(1)

<input type="checkbox"/>	<b>A</b> systematic
<input type="checkbox"/>	<b>B</b> random
<input type="checkbox"/>	<b>C</b> stratified
<input type="checkbox"/>	<b>D</b> opportunistic

(ii) State **one** disadvantage of using one of the sampling methods in the question above, a(i).

(1)

Sampling method .....

.....



Study Figure 4a in the Resource Booklet. It shows sample data on velocity from one site on a river. A cork float was used to measure the time taken to travel between two points, A and B.

(iii) Calculate the mean time taken for the cork float to travel between points A and B.

Give your answer to **one** decimal place.

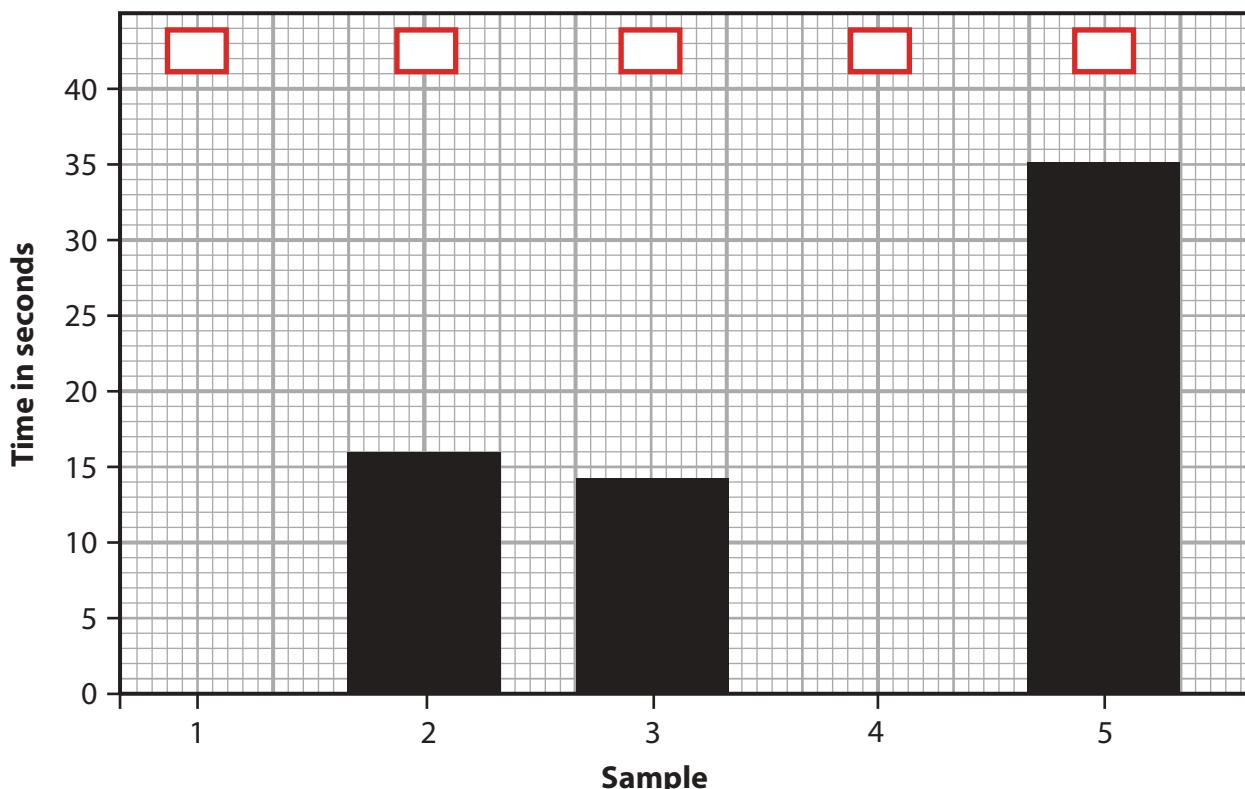
You must show all your workings in the space below.

(2)

.....seconds

(iv) Using the data in Figure 4a (in the Resource Booklet), complete Figure 4b below for measurements 1 and 4.

(2)



**Figure 4b**

**Measurement times taken for float to travel between points A and B at one site**



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(v) Mark an x in the box on Figure 4b which represents the float with the anomalous result.

(1)

(vi) Suggest **one** explanation for this anomaly.

(2)

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(b) To extend the river study, students were asked to use **one** other primary data method.

Explain **one** other primary data method they might have used.

(3)

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You have studied river environments for your geographical enquiry.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8)

## Enquiry question



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**(Total for Question 4 = 20 marks)**



If you answer Question 5 put a cross in the box  .

### 5 Investigating Coastal Environments.

A group of students have investigated changes in sediment size along a stretch of coast every 100 metres.

(a) (i) Identify the type of sampling method used.

(1)

<input type="checkbox"/>	<b>A</b> systematic
<input checked="" type="checkbox"/>	<b>B</b> random
<input type="checkbox"/>	<b>C</b> stratified
<input type="checkbox"/>	<b>D</b> opportunistic

(ii) State **one** disadvantage of using one of the sampling methods in the question above, a(i).

Sampling method .....

(1)

Study Figure 5a in the Resource Booklet. It shows sample data on shingle size collected at five sites along a stretch of coastline.

(iii) Calculate the mean shingle size for the five sites.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... mm



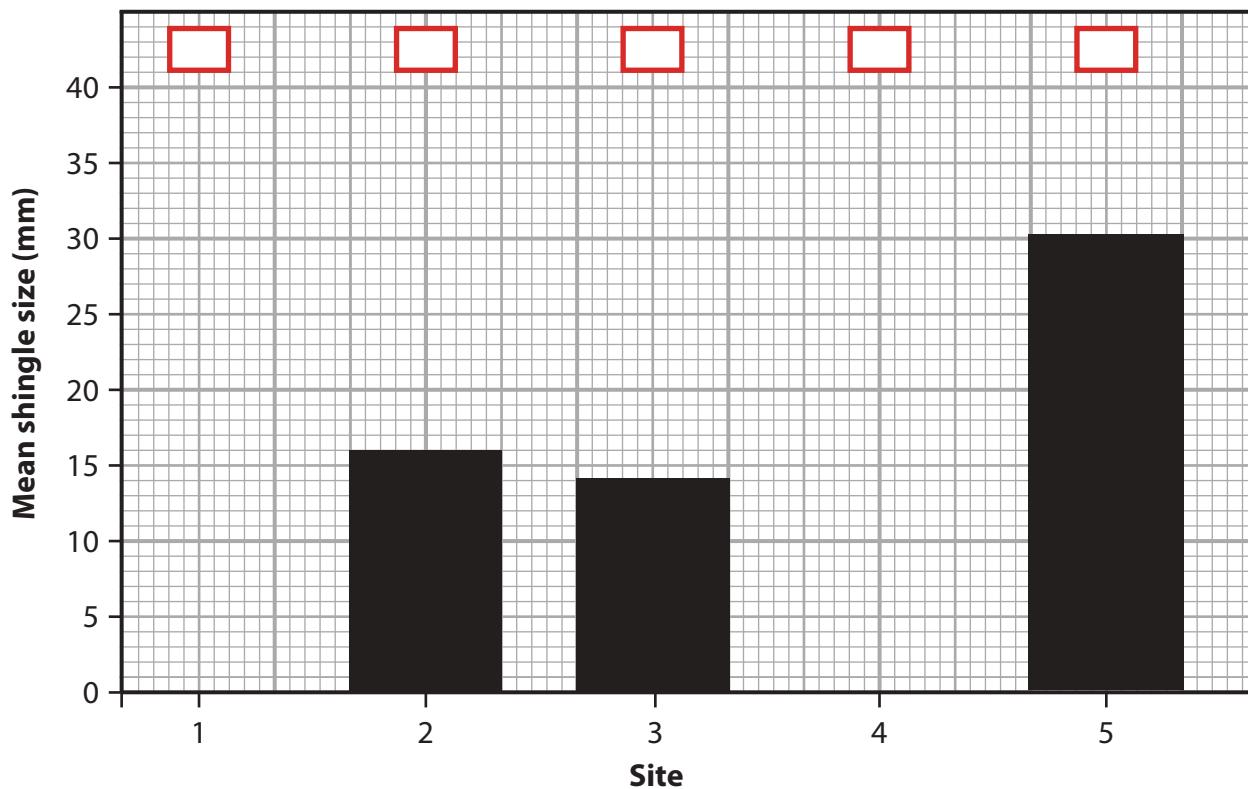
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(iv) Using the data in Figure 5a (in the Resource Booklet), complete Figure 5b below for sites 1 and 4.

(2)



**Figure 5b**

**Mean shingle size at each site**

(v) Mark an x in the box on Figure 5b which represents the site with the anomalous result.

(1)

(vi) Suggest **one** possible explanation for this anomaly.

(2)

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(b) To extend the coastal study, students were asked to use one other primary data method.

Explain **one** other primary data method they might have used.

(3)

You have studied coastal environments for your geographical enquiry.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8)

## Enquiry question



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**(Total for Question 5 = 20 marks)**



If you answer Question 6 put a cross in the box  .

## 6 Investigating Hazardous Environments.

A group of students have investigated the physical processes involved in an extreme weather event, by recording a weather diary.

The students used an anemometer to record wind speed every hour.

(a) (i) Identify the type of sampling method used.

(1)

<input checked="" type="checkbox"/>	<b>A</b> systematic
<input checked="" type="checkbox"/>	<b>B</b> random
<input checked="" type="checkbox"/>	<b>C</b> stratified
<input checked="" type="checkbox"/>	<b>D</b> opportunistic

(ii) State **one** disadvantage of using one of the sampling methods in the question above, a(i).

Sampling method .....

(1)

Study Figure 6a in the Resource Booklet. It shows sample data about wind speed.

(iii) Calculate the mean wind speed for the five samples.

Give your answer to one decimal place.

You must show all your workings in the space below.

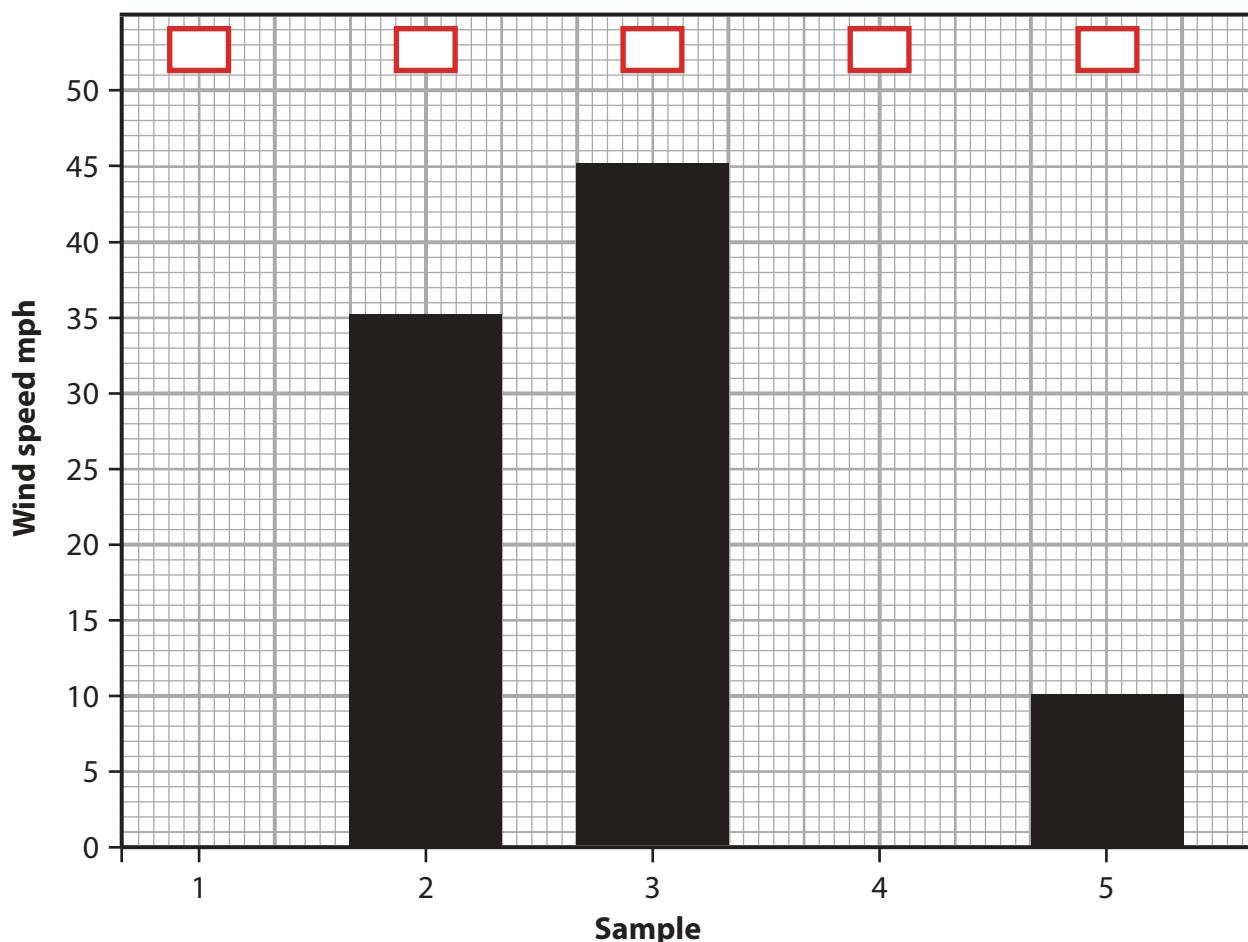
(2)

..... mph



(iv) Using the data in Figure 6a (in the Resource Booklet), complete Figure 6b below for measurements 1 and 4.

(2)



**Figure 6b**

## Wind speed measurements

(v) Mark an x in the box on Figure 6b which represents the sample with the anomalous result.

(1)

(vi) Suggest **one** possible explanation for this anomaly.

(2)

(b) To extend the weather study, students were asked to use **one** other primary data method.

Explain **one** other primary data method.

(3)

You have studied hazardous environments for your geographical enquiry.

(c) Evaluate how successful your chosen data analysis methods were in answering your geographical enquiry question.

(8)

## Enquiry question



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**(Total for Question 6 = 20 marks)**

**TOTAL FOR SECTION B = 20 MARKS**  
**TOTAL FOR PAPER = 70 MARKS**



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Pearson Edexcel International GCSE (9-1)

# Tuesday 21 May 2019

### Afternoon (Time: 1 hour 10 minutes)

Paper Reference **4GE1/01**

# Geography

# Paper 1: Physical Geography

## Resource Booklet

**Do not return the Resource Booklet with the question paper.**

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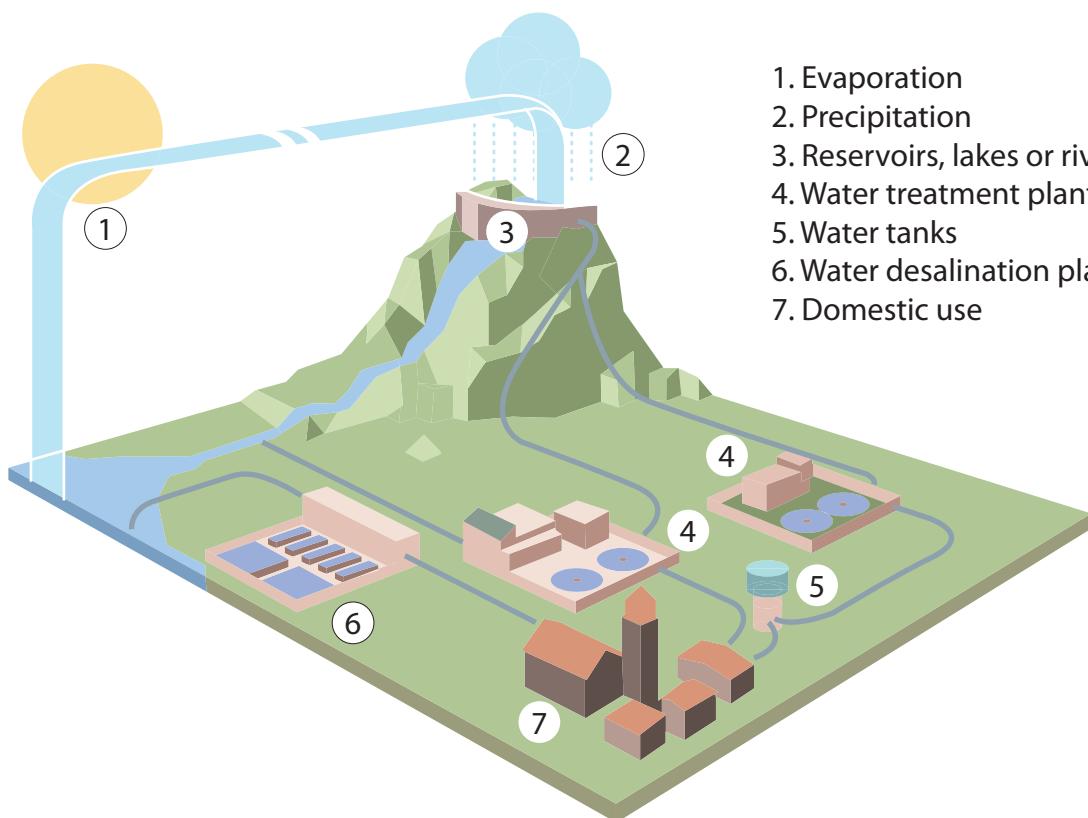


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## Water cycle management



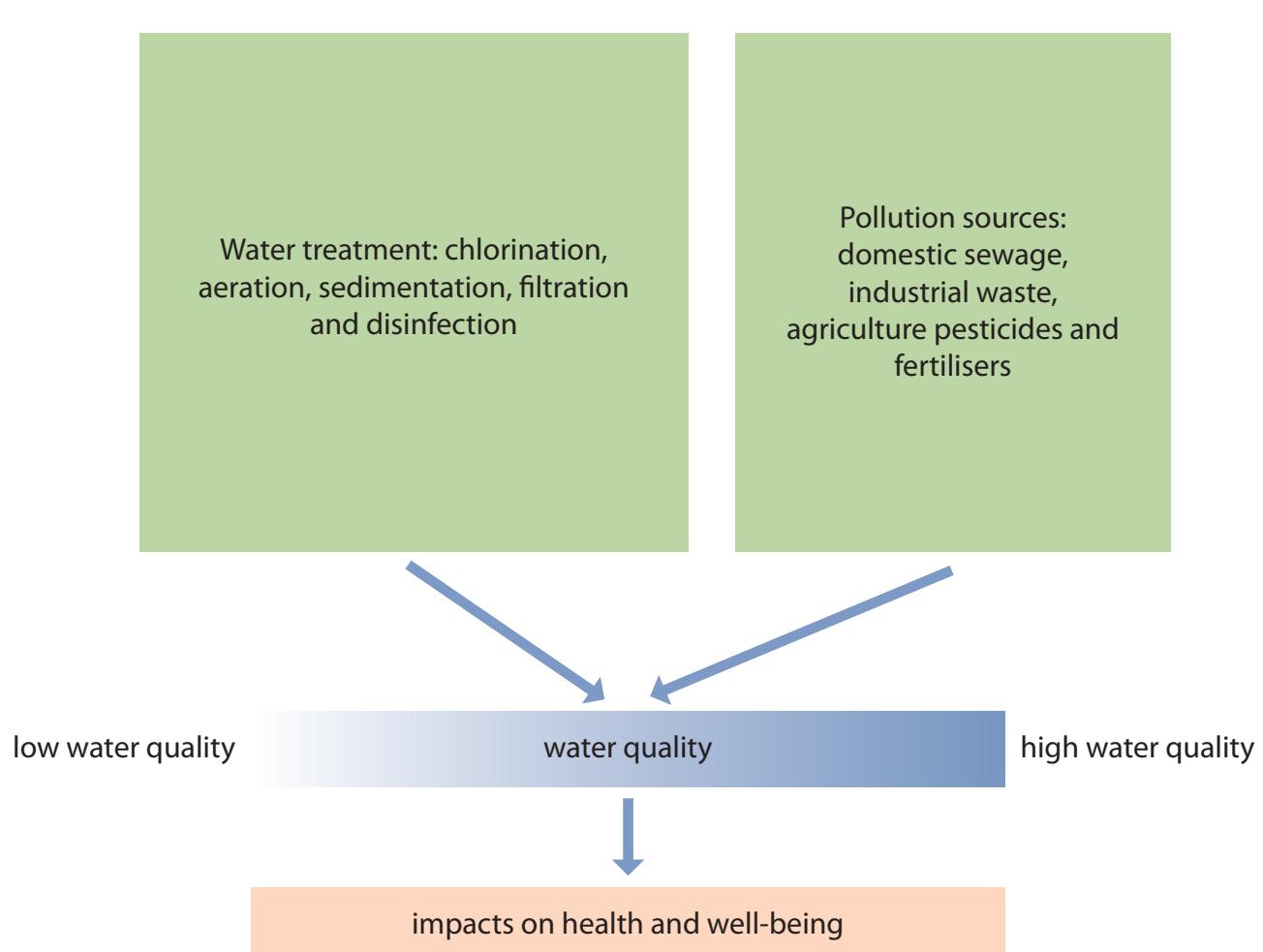
(Source: <http://www.sociocosmo.com/2015/05/india-water-management-Indian-agriculture-IMD-Skymet-ICAR.html>)

**Figure 1a**  
**Water management in India**



(Source: © David Holmes)

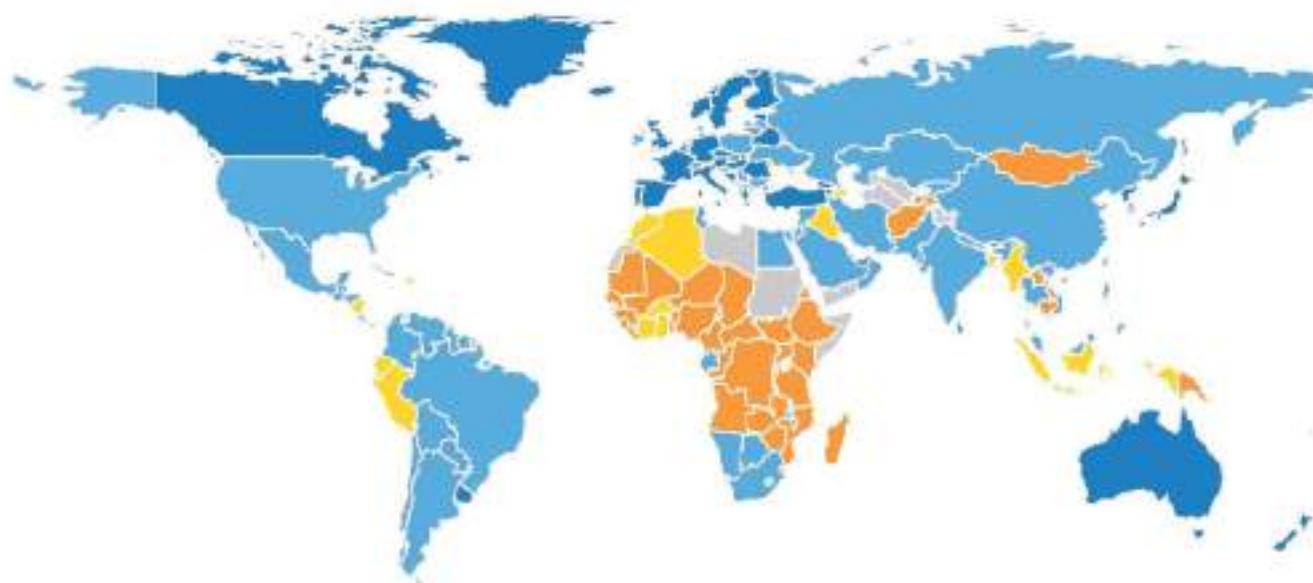
**Figure 1b**  
**A river landform in Hong Kong**



## Figure 1c

### Factors affecting water quality

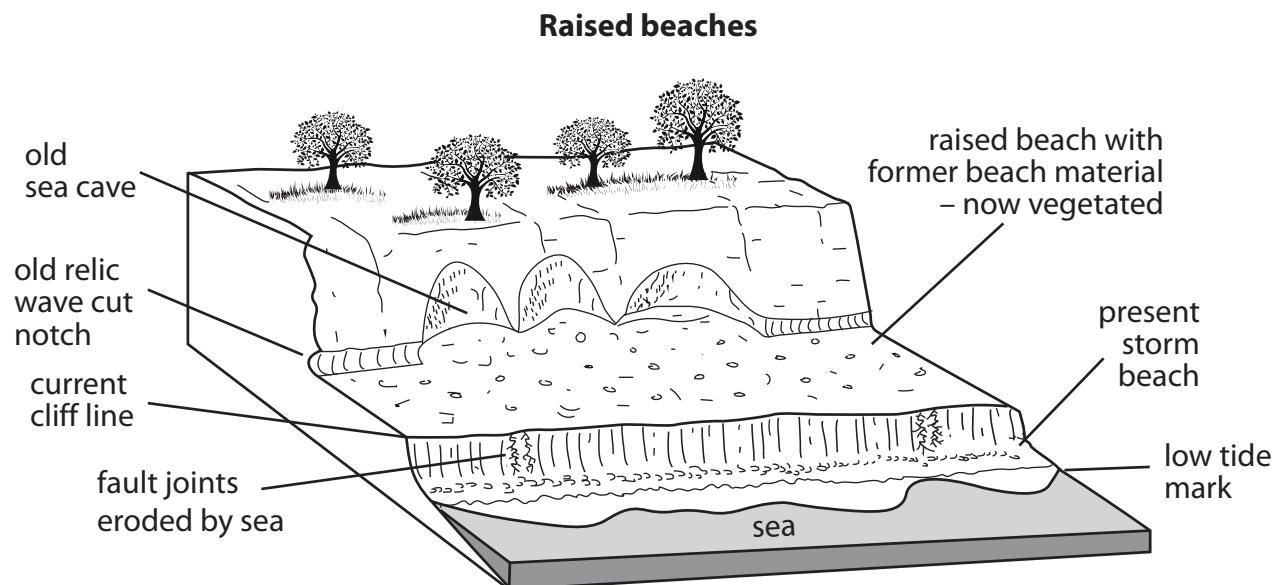
<1    1-10    11-20    >20    Insufficient data or not applicable



(Source: <https://www.theguardian.com/global-development-professionals-network/2017/mar/17/access-to-drinking-water-world-six-infographics#img-2>)

**Figure 1d**

**Percentage of people using untreated drinking water**



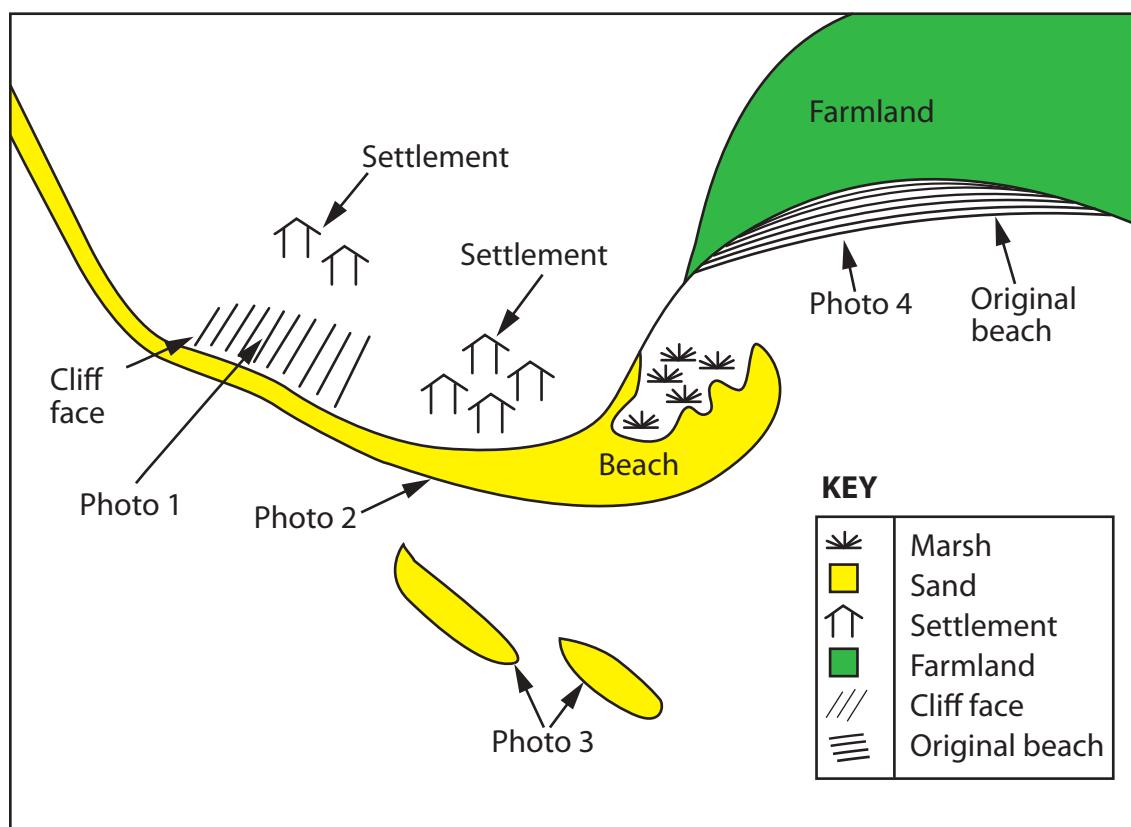
**Figure 2a**

**An example of a coastal landscape in south west England**



(Source: © De Agostini Picture Library / Contributor/Getty Images)

**Figure 2b**  
**A coastal landscape in St Lucia**



**Figure 2c**  
**Different approaches to shoreline management along a stretch of coastline**



Photo 1 Cliff regrading high maintenance and high cost.



Photo 2 Beach replenishment high maintenance cost and £20 per cubic metre so could be quite expensive.



Photo 3 Development and extension of natural sandbars. This has a similar cost and maintenance as beach replenishment.

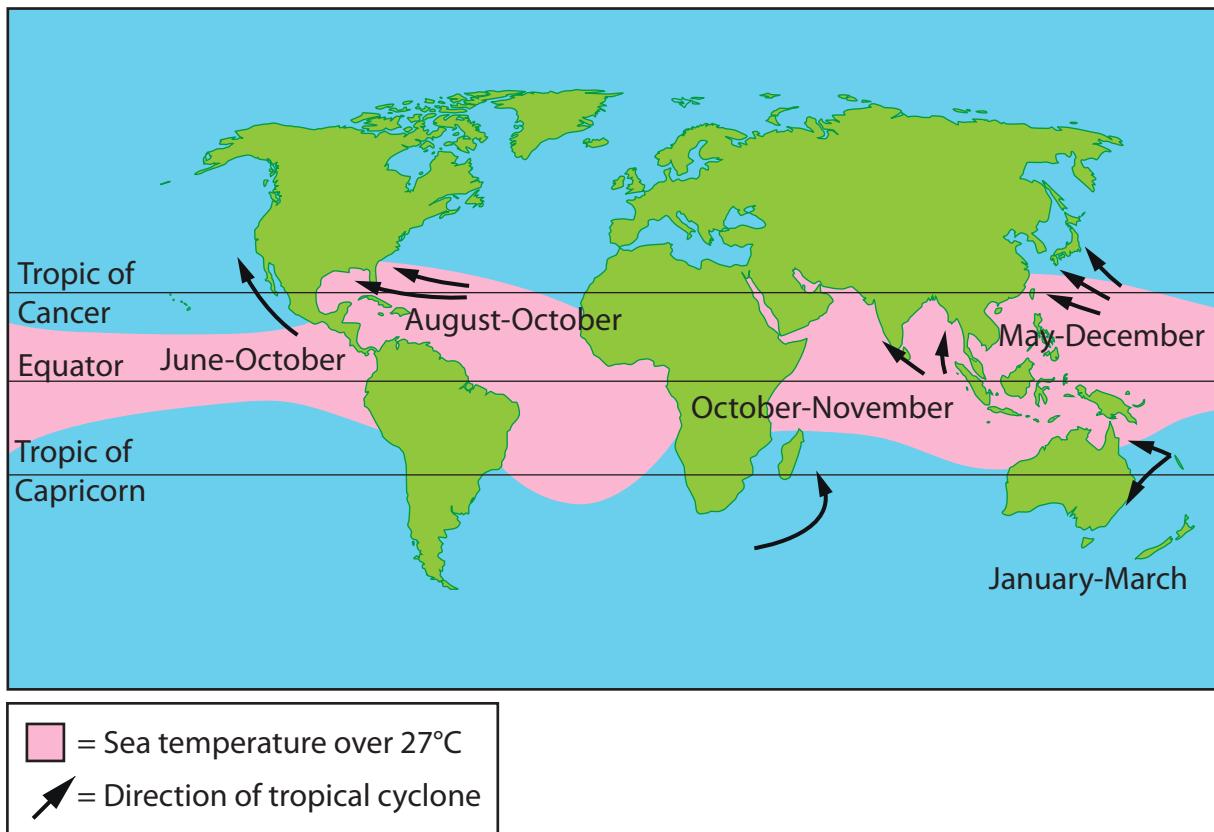


Photo 4 Managed retreat low maintenance and cost dependent on compensation due to people living in the area.

(Sources: Photo 1 - © Geography Photos / Contributor/Getty Images, Photo 2 - © Mick House / Alamy Stock Photo, Photo 4 - Crown Copyright, Photo 3 - © Thales Paiva/Art in All of Us / Contributor/Getty Images)

#### Figure 2d

#### Photographic evidence of beach management techniques referred to in Figure 2c

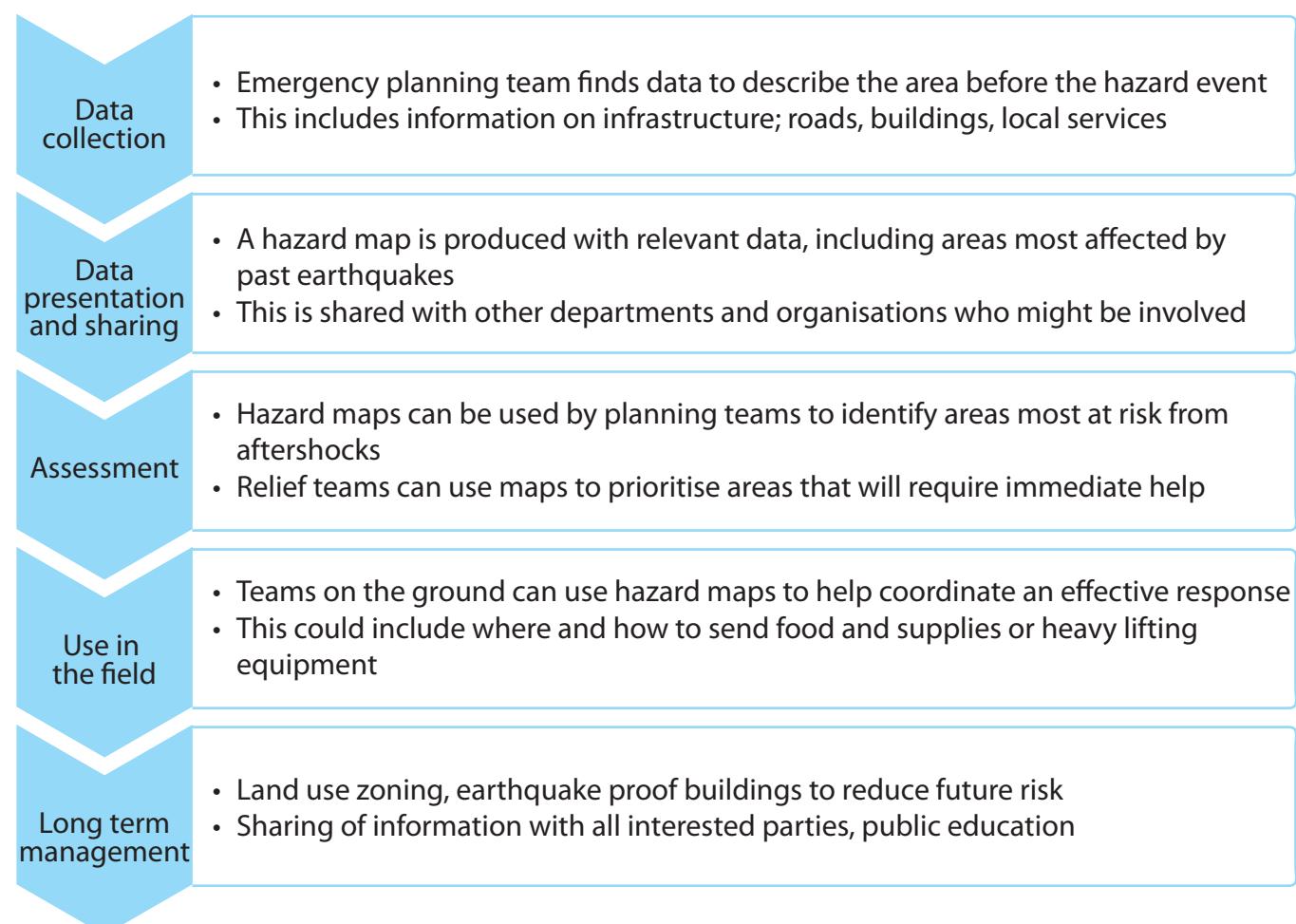


**Figure 3a**  
**Factors affecting the formation of tropical cyclones**



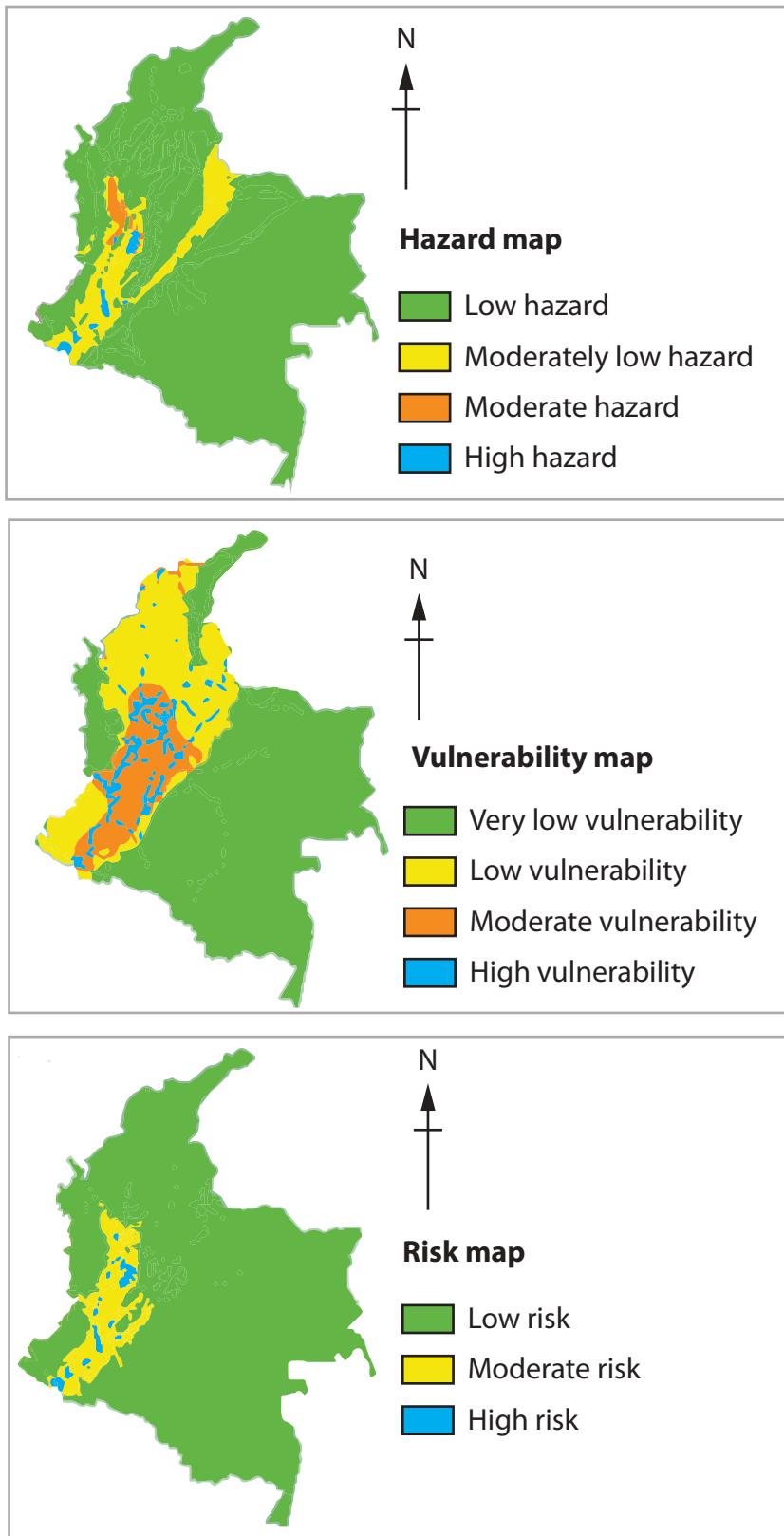
(Source from: [https://commons.wikimedia.org/wiki/File:Tsunami\\_shelter\\_near\\_Khao\\_Lak\\_Thailand.jpg](https://commons.wikimedia.org/wiki/File:Tsunami_shelter_near_Khao_Lak_Thailand.jpg))

**Figure 3b**  
**A tsunami resistant building**



**Figure 3c**

**Stages in hazard mapping**



(Sourced from: Van Westen, C.J. (1997) Hazard, vulnerability and risk analysis. In: Cees van Westen, Asunción Saldaña López, Patricia Uría Cornejo and Guillermo Chávez Ardanza (eds). ILWIS Applications Guide, p 1-18. <https://www.itc.nl/ilwis/applications-guide/application-1/>)

**Figure 3d**

**An example of hazard, vulnerability and risk maps for tectonic events in a South American country**

Sample	Time taken (seconds)
1	21.1
2	16.0
3	14.1
4	15.0
5	35.0

**Figure 4a**  
**River data collected by a group of students**

Site	Mean shingle size (mm)
1	21.1
2	16.0
3	14.1
4	10.0
5	30.1

**Figure 5a**  
**Coastal data collected by a group of students**

Sample	Wind speed (mph)
1	50.1
2	35.1
3	45.1
4	40.0
5	10.0

**Figure 6a**

**Hazardous environment data collected by a group of students**