

**Paper Reference 4GE1/01**  
**Pearson Edexcel**  
**International GCSE (9–1)**

# **Geography**

## **PAPER 1: Physical geography**

**Tuesday 14 November 2023 – Morning**

**Time: 1 hour 10 minutes**

# **Resource Booklet**

**Do not return this Resource Booklet with the Question Paper.**

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For some Figures there is a modified colour and modified black and white diagram. You may use whichever version is easier for you to view. Some diagrams are only in modified colour but you are then provided with a description of the diagram.

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Figure 1a

Information about water usage in developed and developing/emerging countries

Developed

Developing/emerging

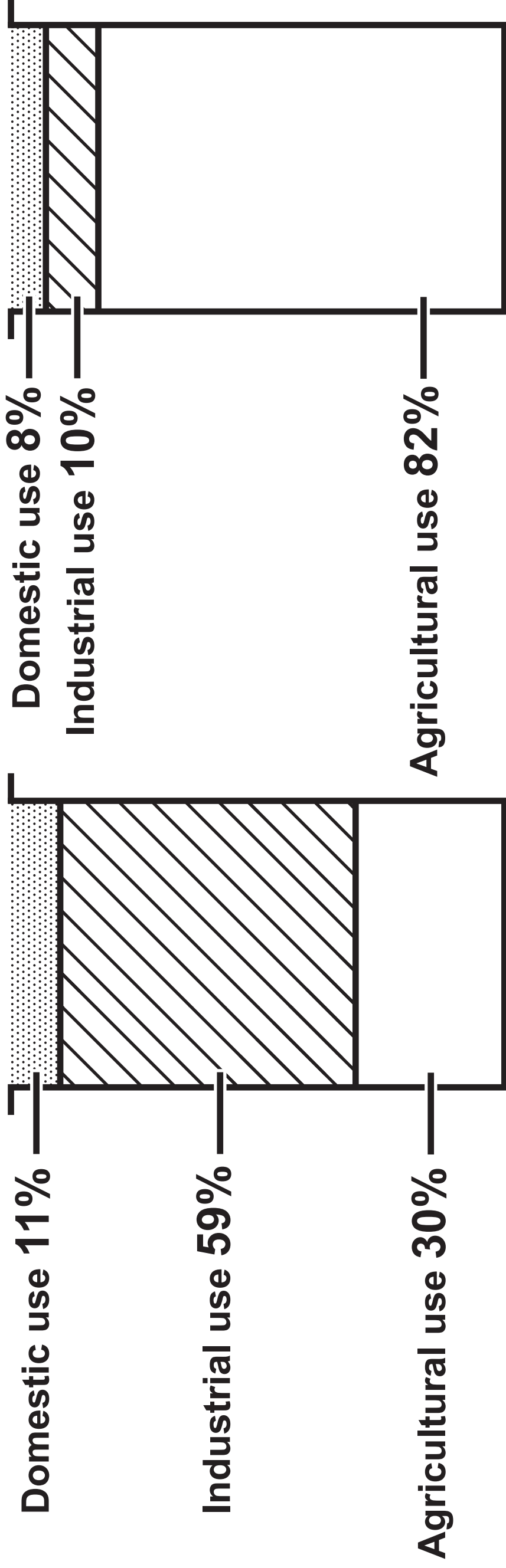
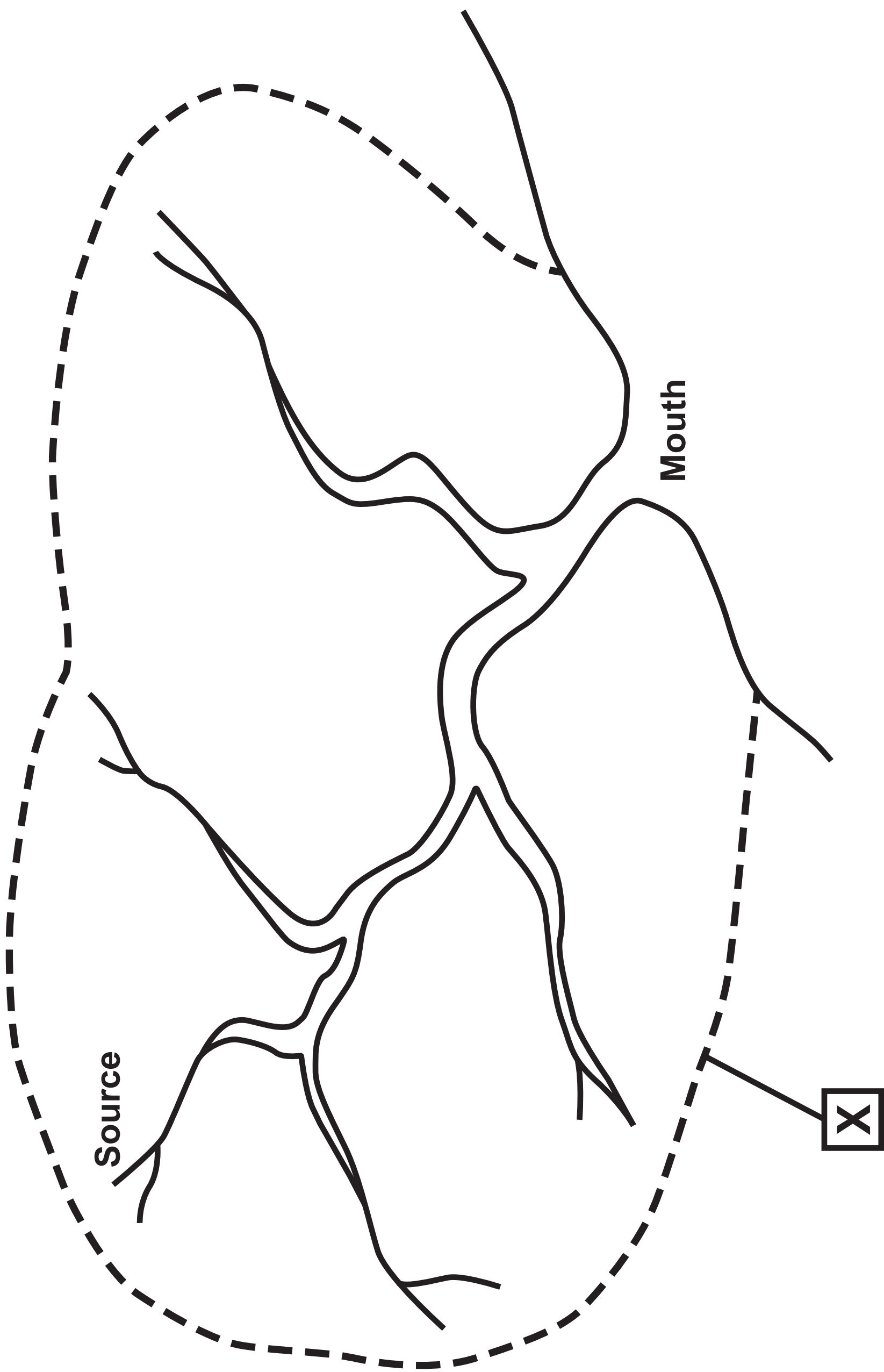


Diagram of a drainage basin



## **Figure 1c – Information**

### **Diagram of China's south–north water transfer (pipeline and canal) and selected impacts**

#### **Impacts on northern regions: over 200 million population**

- **Will bring 4 billion cubic metres of water to the north**
- **Less groundwater abstraction reducing subsidence**
- **Maintains farming in China's breadbasket**
- **Reduces impact from droughts**

#### **Impacts on southern regions:**

- **Displaced hundreds of thousands of people**
- **Droughts experienced in south**
- **Increased pollution from factories**
- **Loss of wildlife**

Figure 1c – Diagram (Colour)

## Diagram of China's south–north water transfer (pipeline and canal) and selected impacts

**KEY** ➡ Pipelines and canals  
 [---] Area of large wheat crop production (breadbasket)

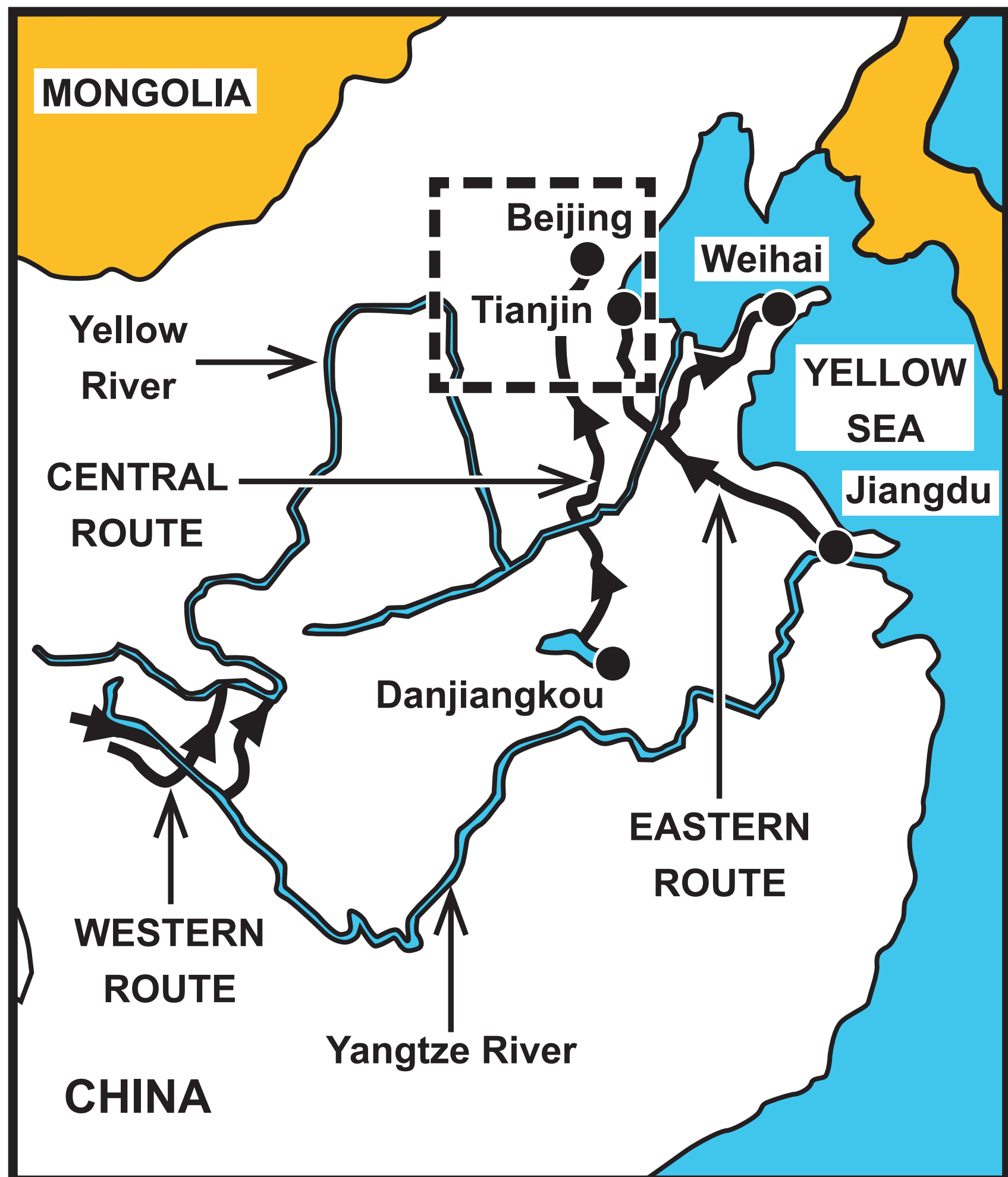


Figure 1c – Diagram (Black and White)

# Diagram of China's south–north water transfer (pipeline and canal) and selected impacts

**KEY** ➔ Pipelines and canals  
 [---] Area of large wheat crop production (breadbasket)

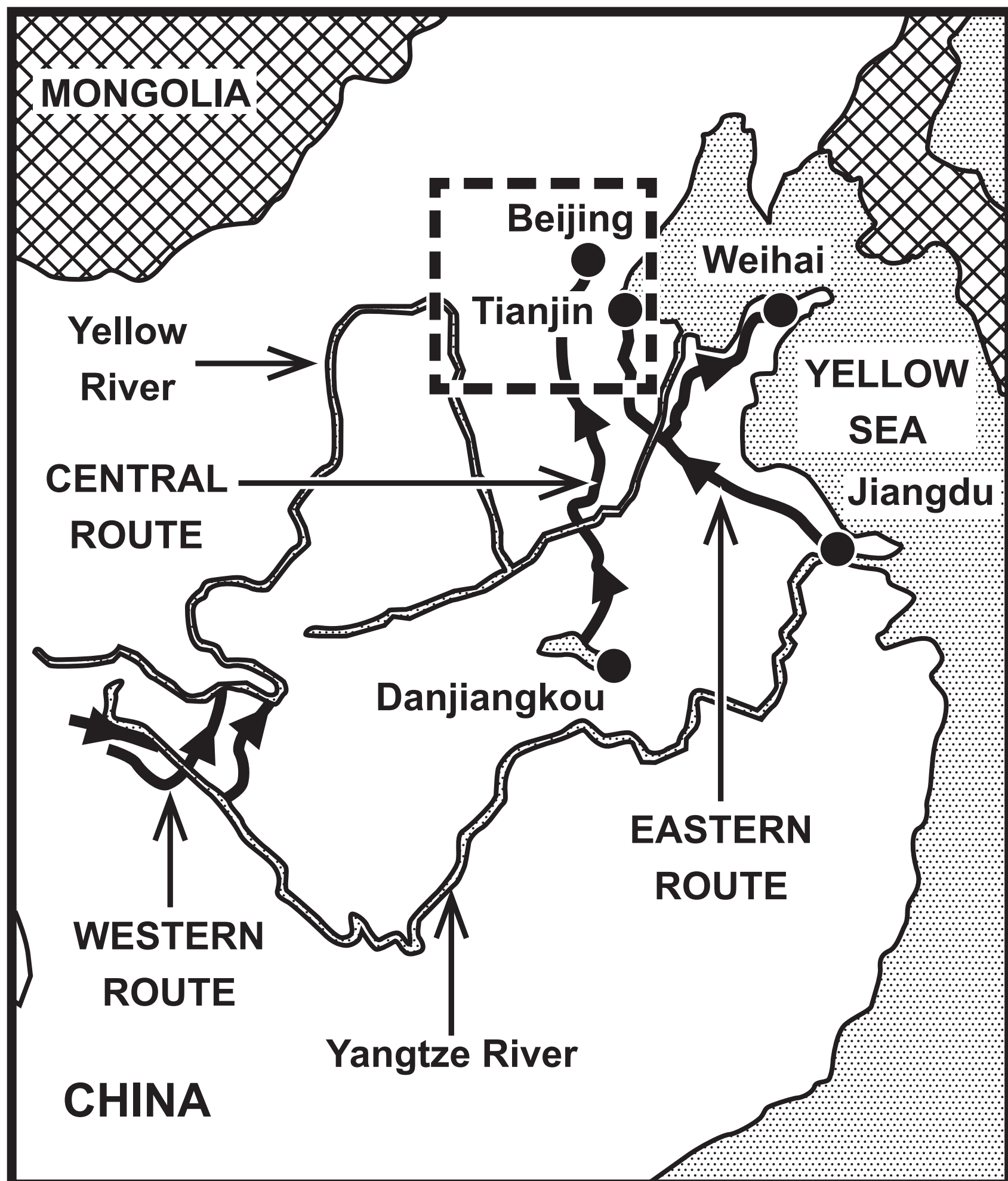




Figure 2a (Colour) – Part 1

A diagram showing coastal environment before and after managed retreat

Before managed retreat

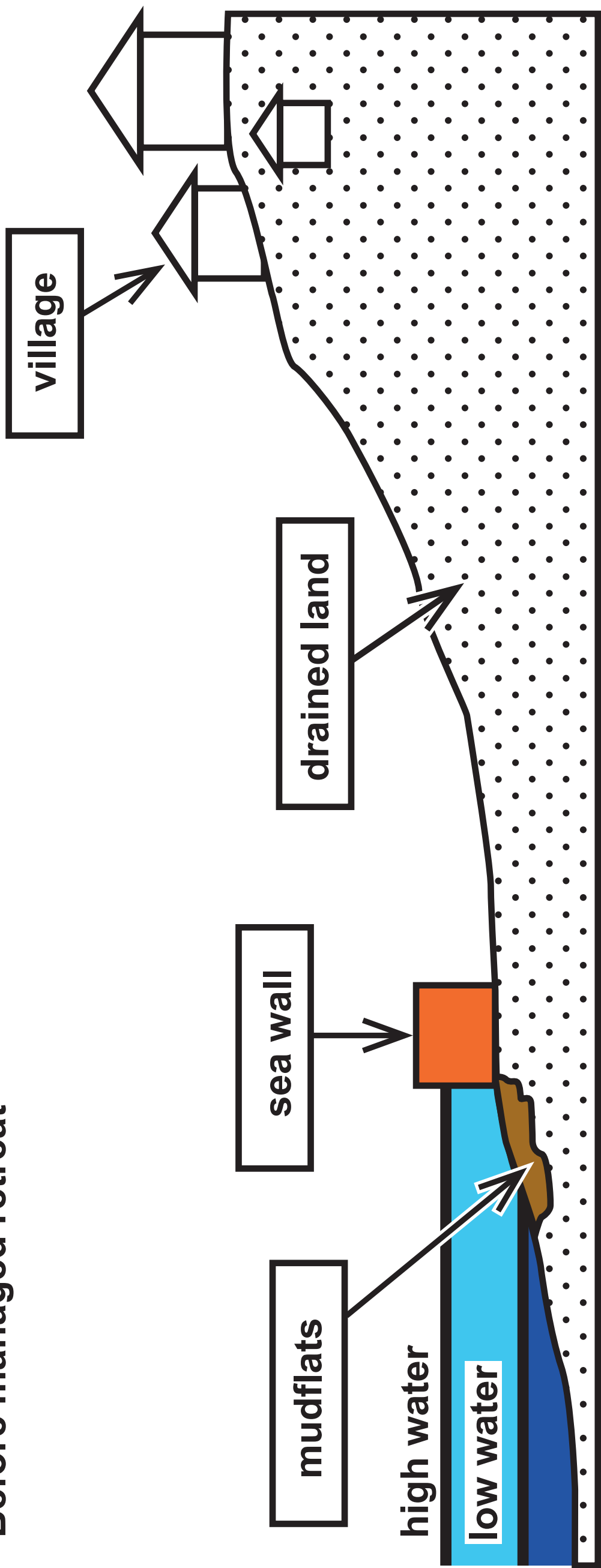


Figure 2a (Colour) – Part 2

A diagram showing coastal environment before and after managed retreat

After managed retreat

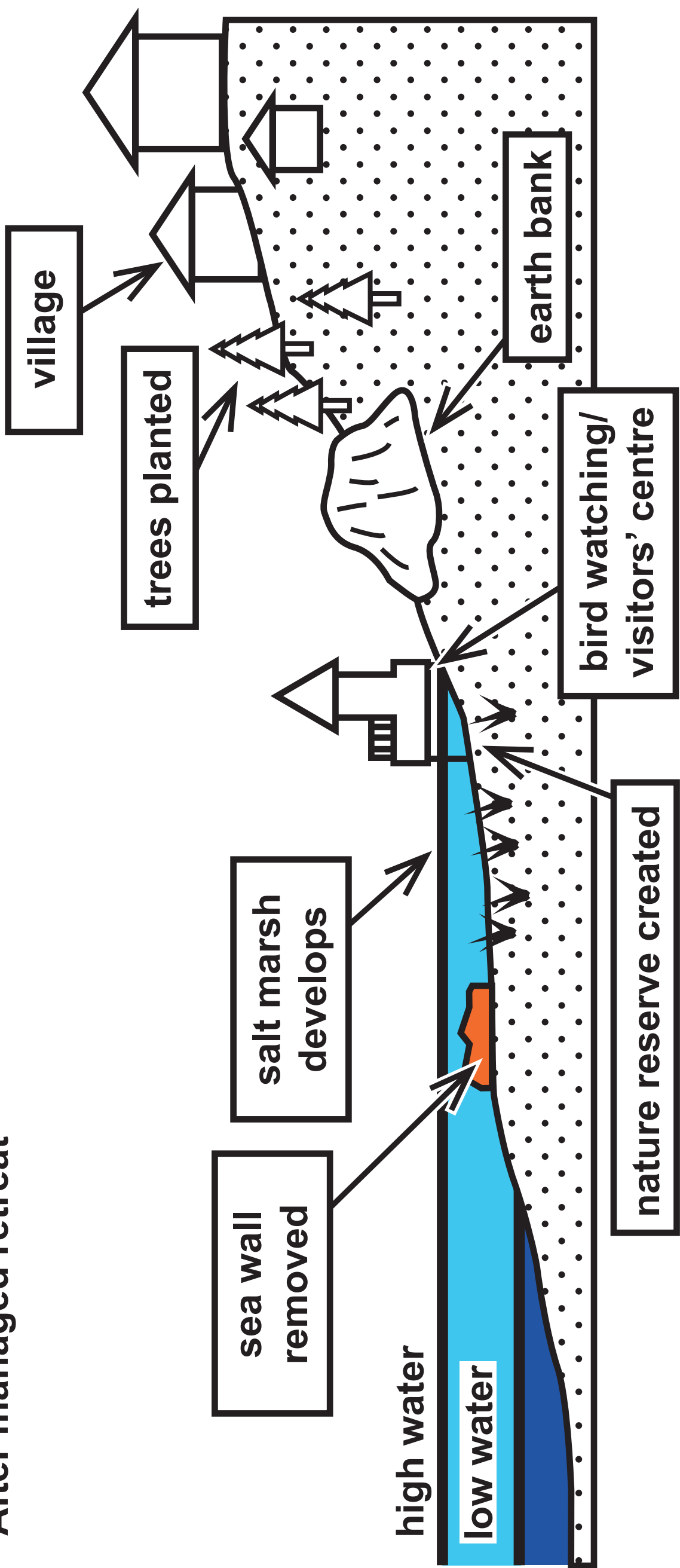


Figure 2a (Black and White) – Part 1

A diagram showing coastal environment before and after managed retreat

Before managed retreat

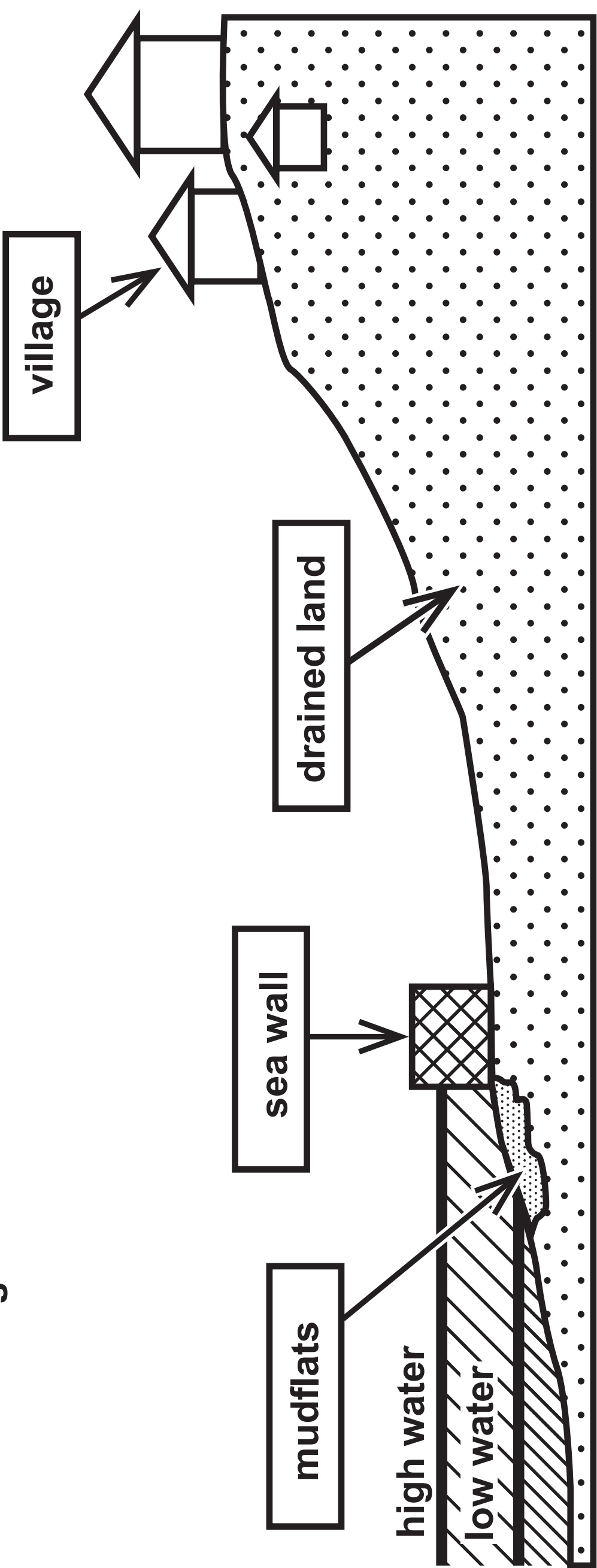


Figure 2a (Black and White) – Part 2

A diagram showing coastal environment before and after managed retreat

After managed retreat

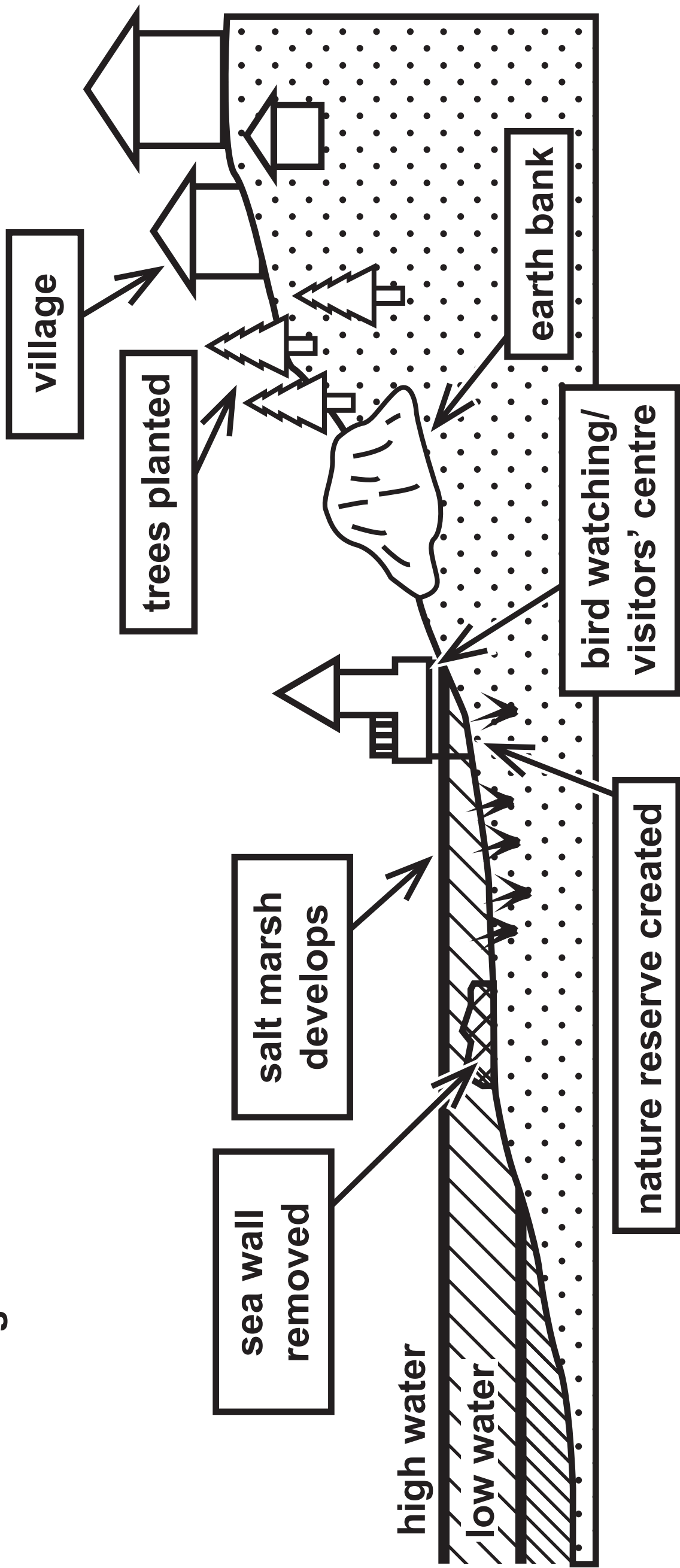
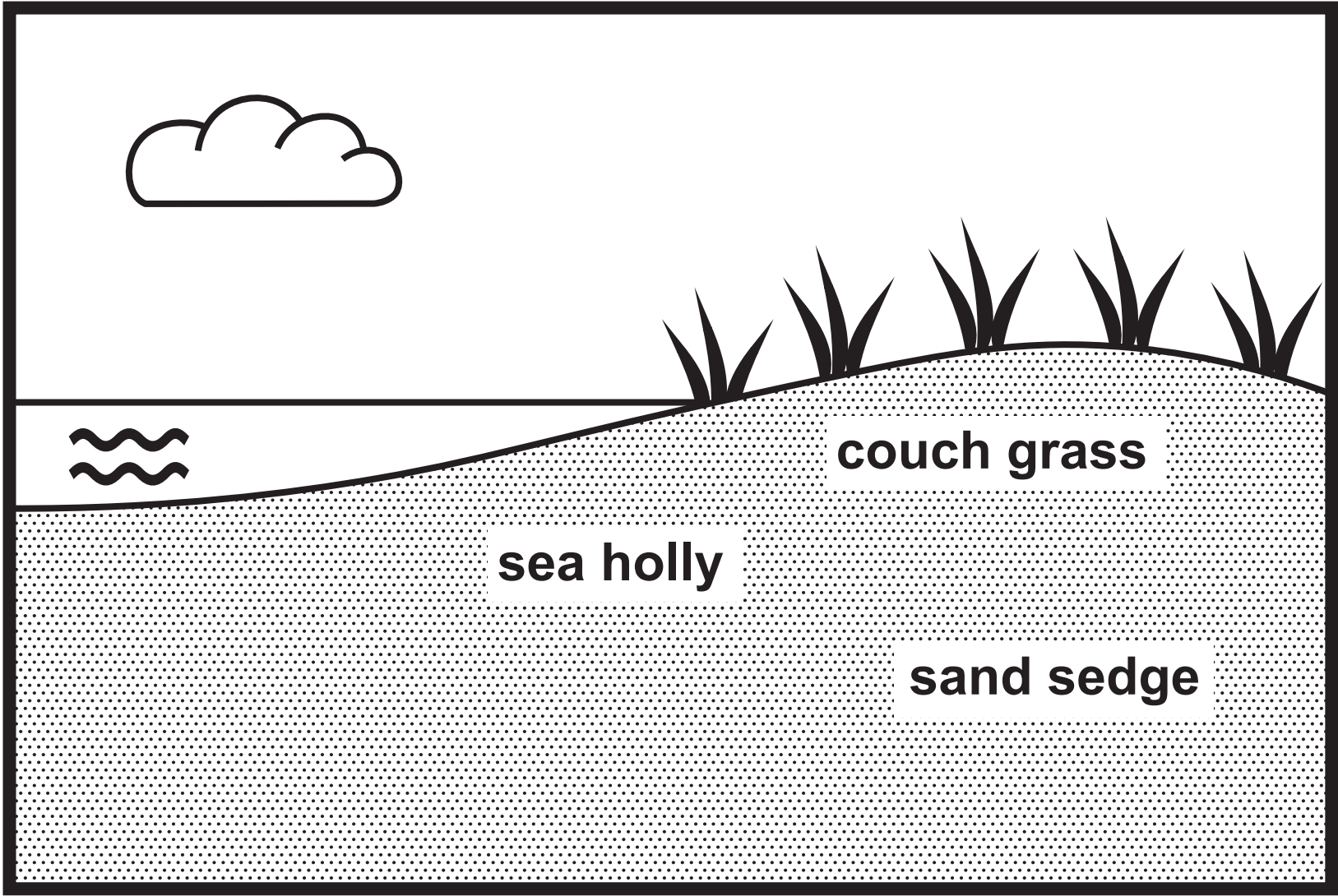




Figure 2b

Coastal ecosystem



KEY    Sand    Clouds    Sea

**Figure 2c – Diagram (Colour)**

**Rates of mangrove destruction and regrowth  
(mainly planted), in south-east Asia**



**KEY**  Sea

**Figure 2c – Diagram (Black and White)**

**Rates of mangrove destruction and regrowth  
(mainly planted), in south-east Asia**



**KEY**  **Sea**



Figure 2c – Table

Rates of mangrove destruction and regrowth (mainly planted), in south-east Asia

	Country		
	Myanmar ●	Indonesia ▲	Viet Nam X
Fish farming (Aquaculture) %	1	48	21
Rice farming %	88	0	10
Oil palm %	0·5	23	1
Mangrove regrowth (mostly planted) %	8	11	5
Urban %	2	2	63
Coastal erosion %	0·5	16	0



The structure of tropical cyclones

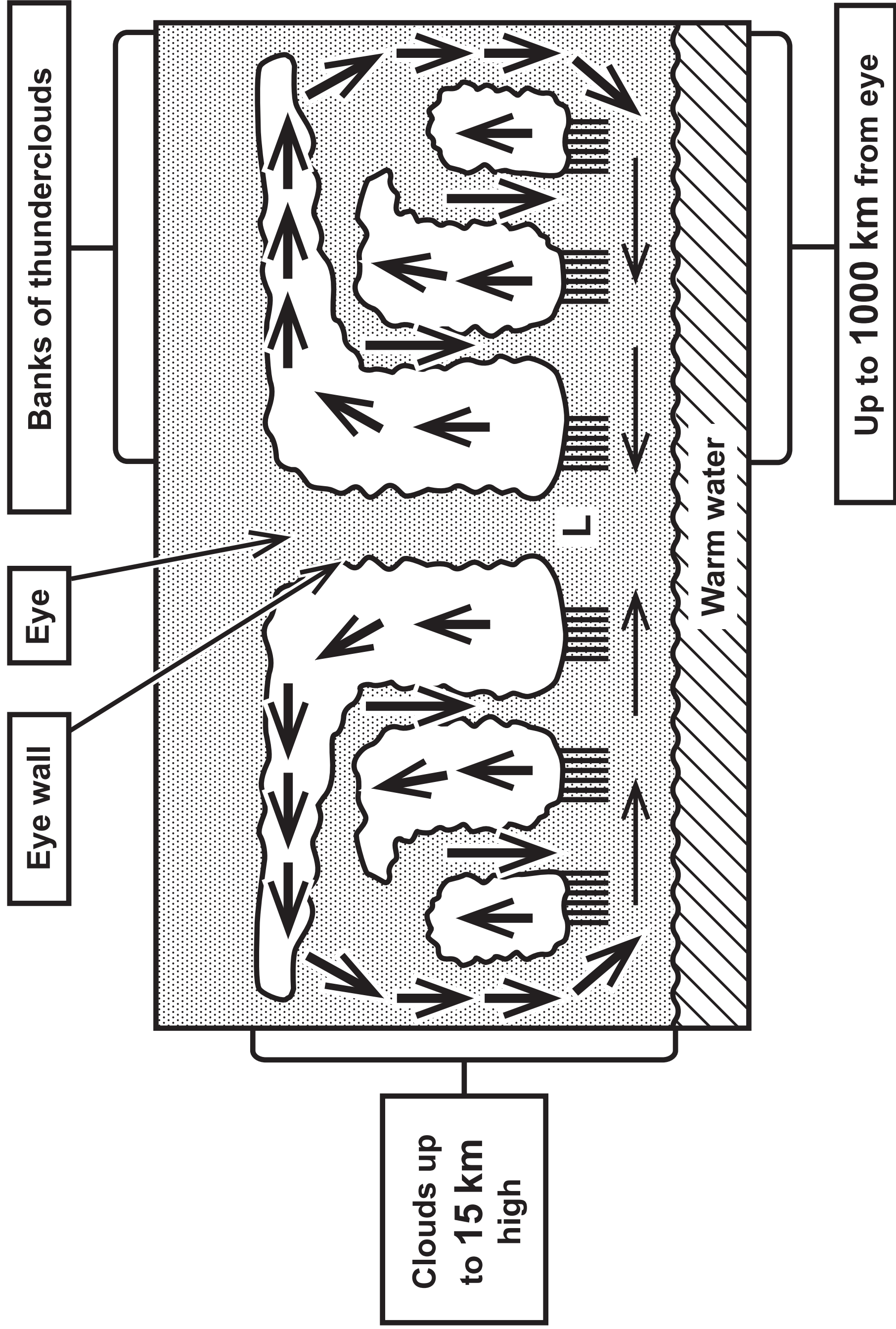


Figure 3b (Colour)

Structure of a volcano

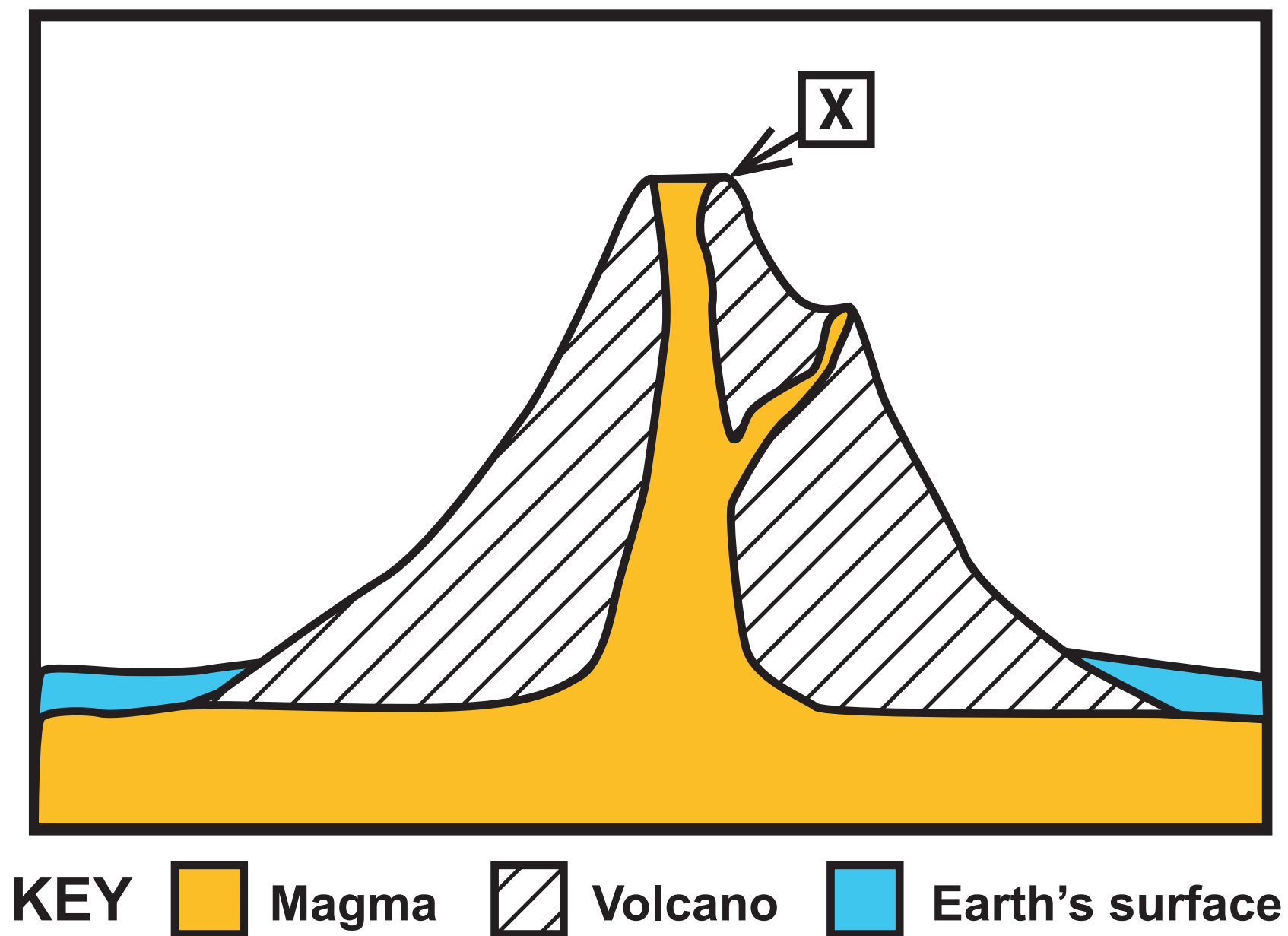
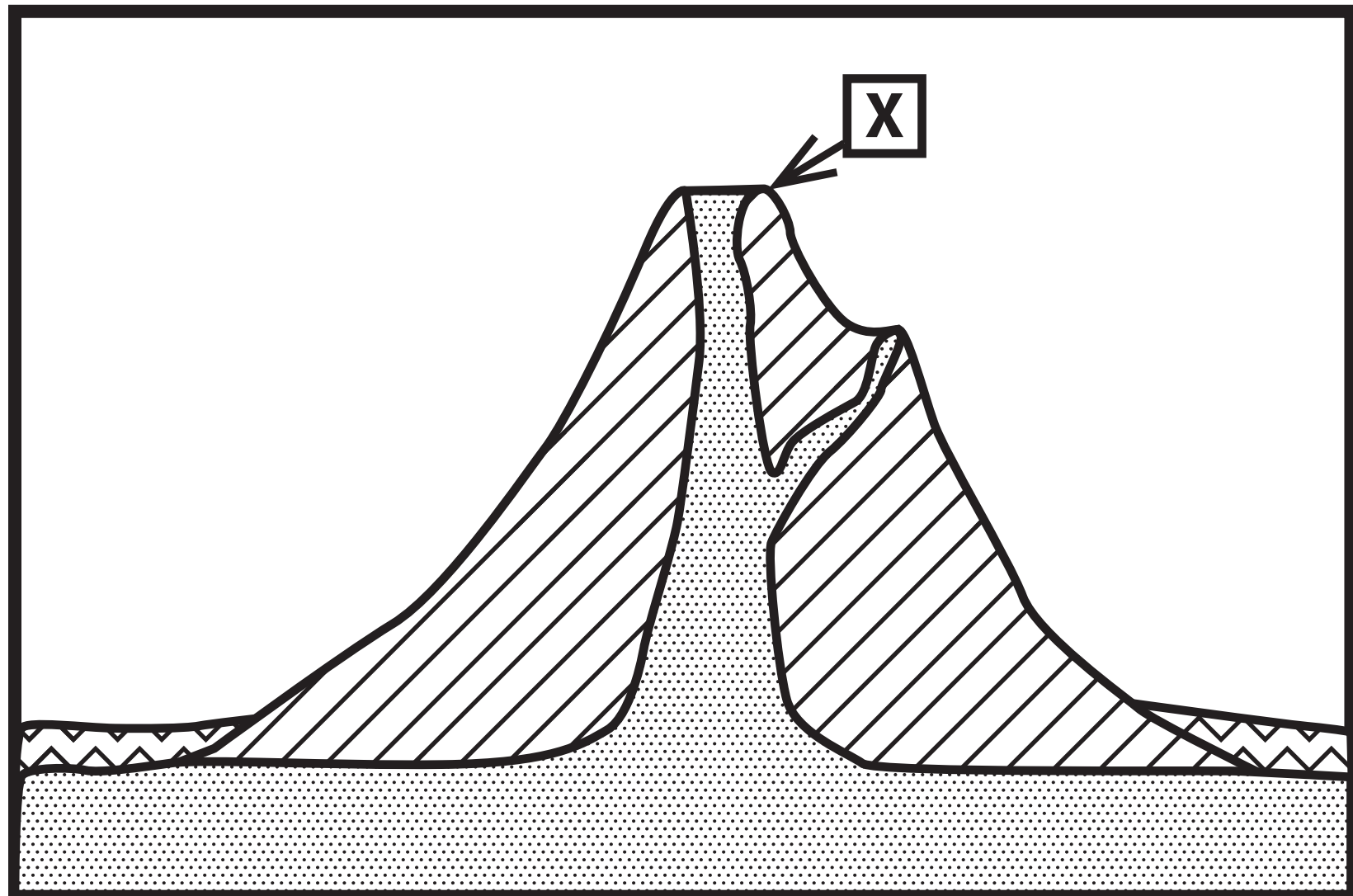


Figure 3b (Black and White)

# Structure of a volcano



**KEY**  Magma  Volcano  Earth's surface

## Figure 3c – Information

### Types of plate margins and scale of tectonic hazards

**Nepal Earthquake – 7·8 magnitude**

**Frequency: Once every 100 years**

**Iceland volcanic eruption – Volcanic Explosivity Index (VEI) 3**

**Frequency: Once every 25 years**

**New Zealand Earthquake – 7·8 magnitude**

**Frequency: Once every 3 years**

**Tonga eruption – VEI 5**

**Frequency: Once every millennium**

Figure 3c – Diagram (Colour)

# Types of plate margins and scale of tectonic hazards

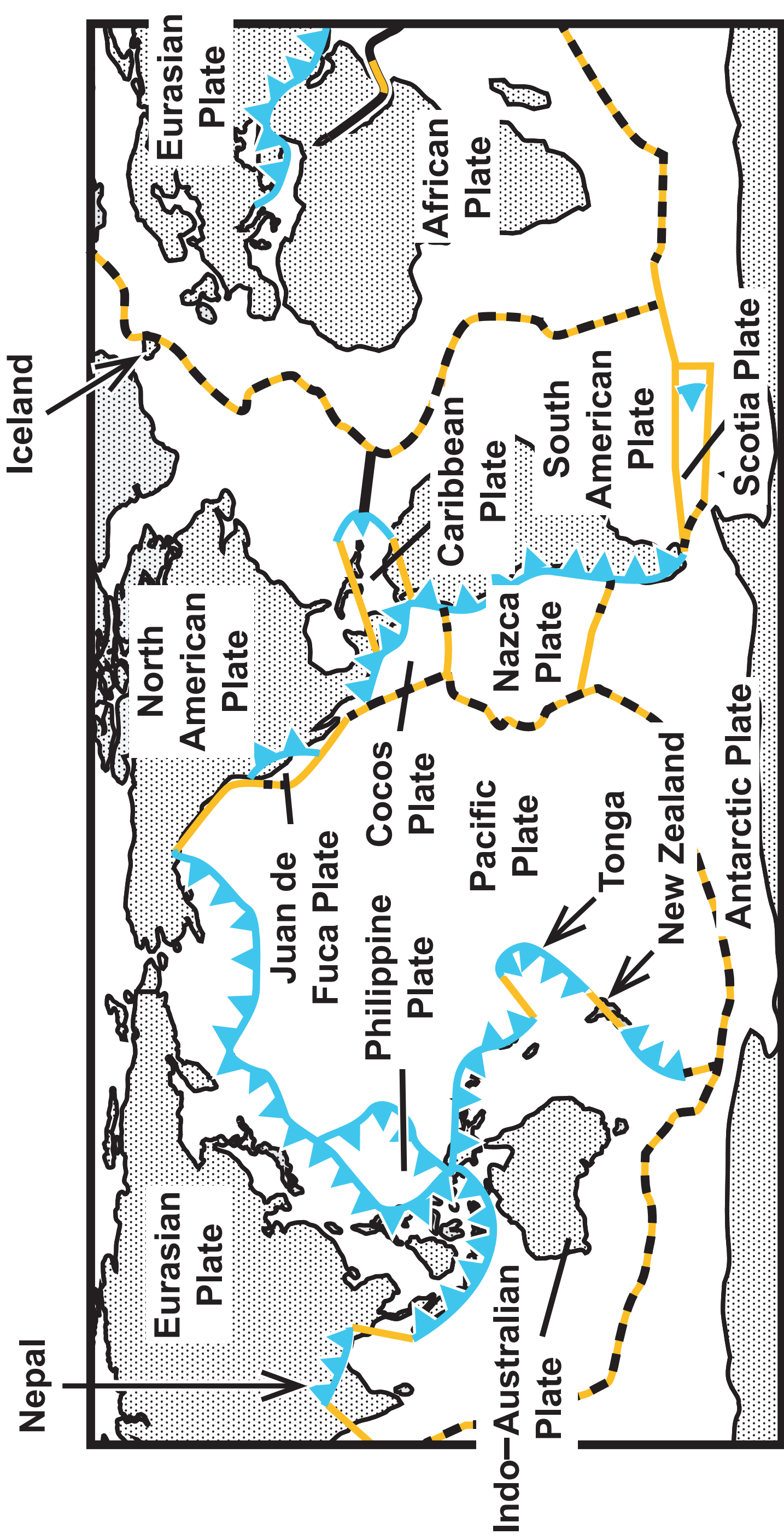
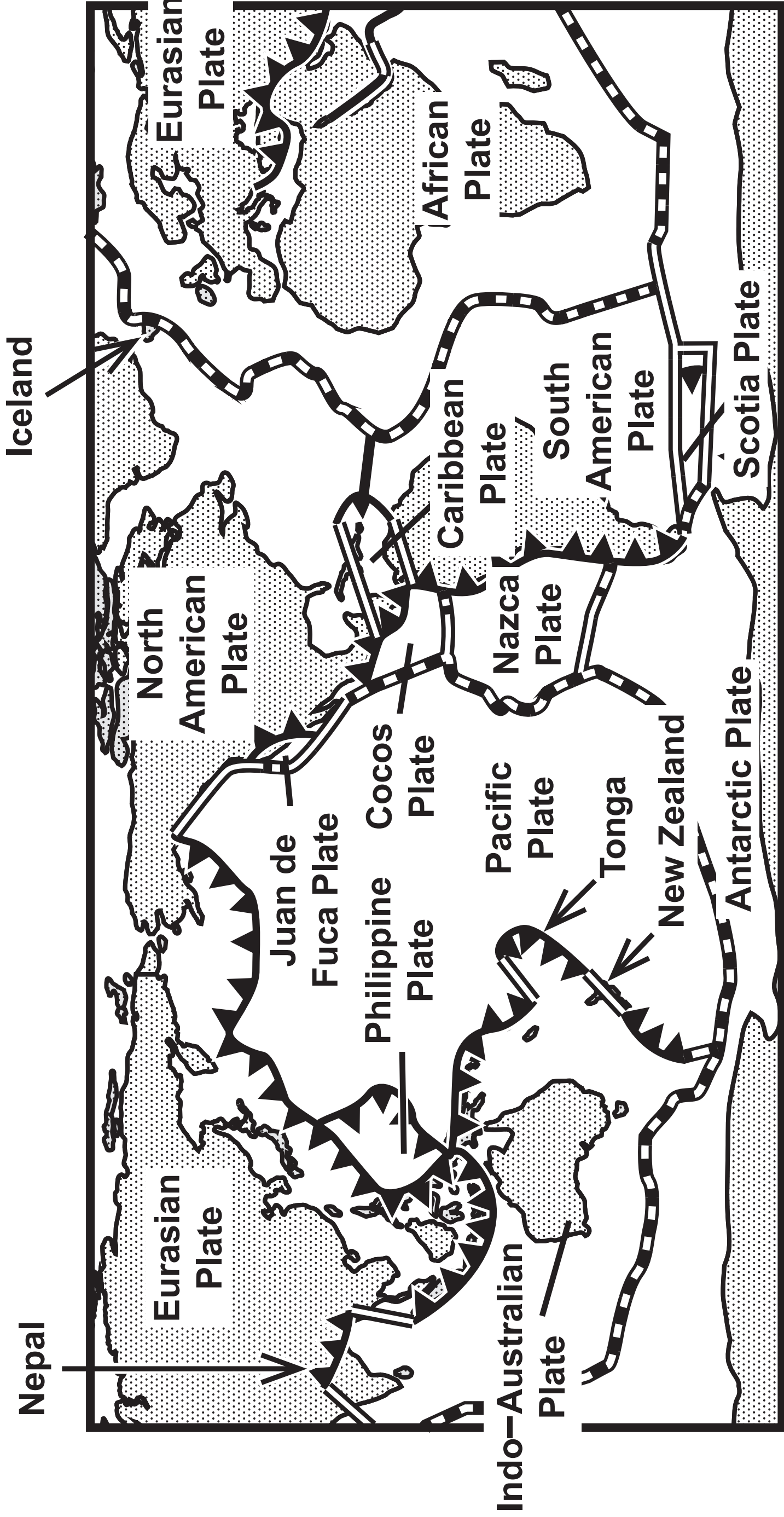
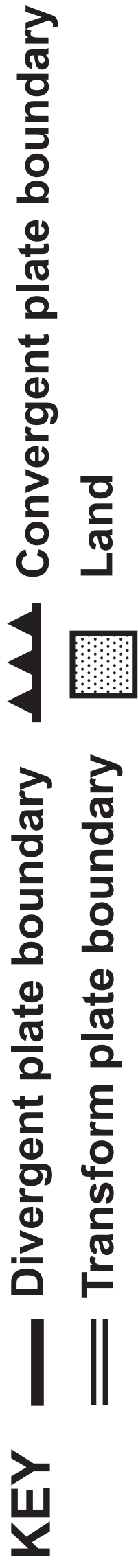




Figure 3c – Diagram (Black and White)

Types of plate margins and scale of tectonic hazards



## Figure 4a – Information

### Details of the students' river investigation

**A group of students carried out an investigation into how river width and velocity change along a river.**

**Sampling strategy:** They chose random sampling to select the three sites where data was collected.

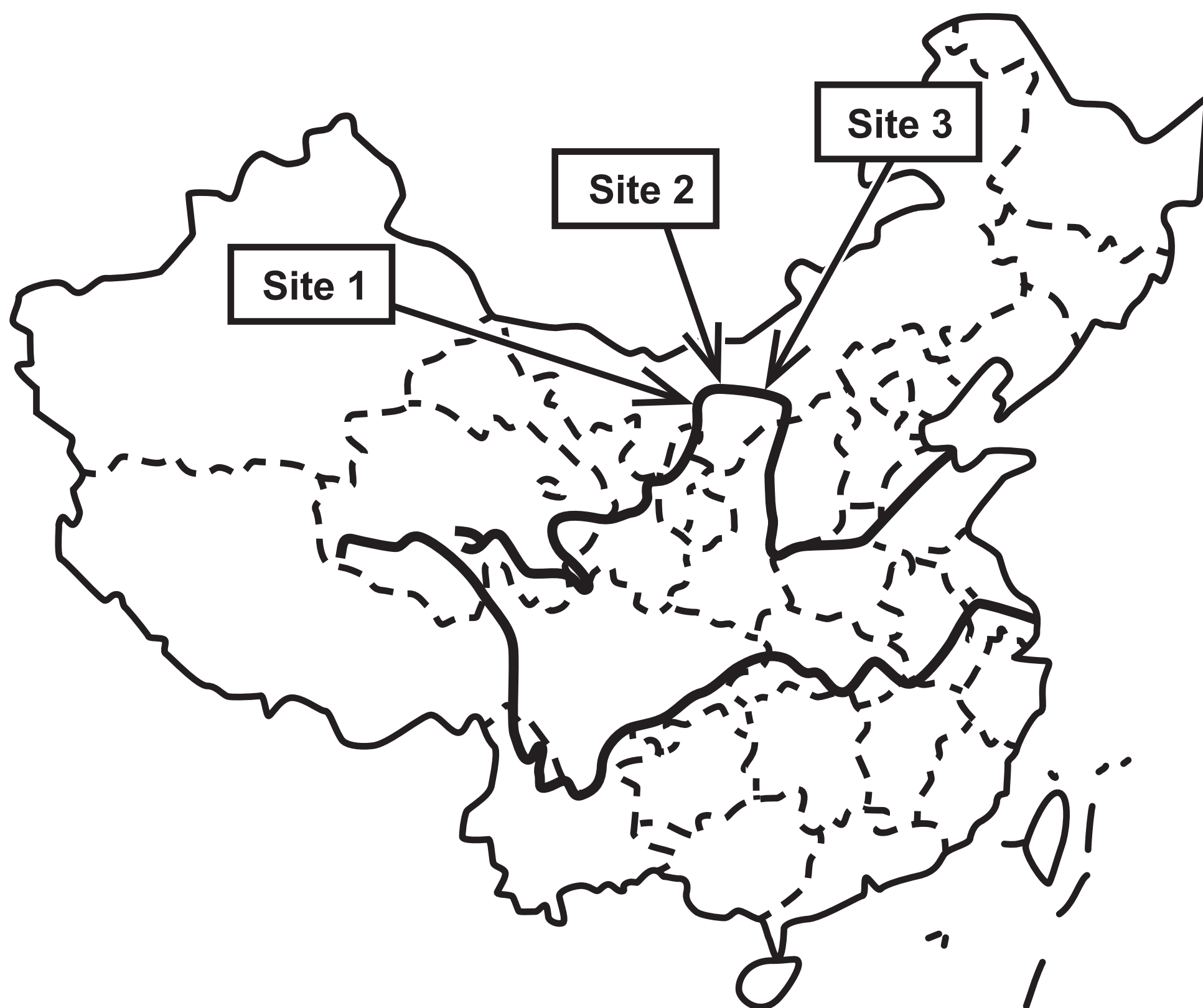
**Time of year:** The data was collected during one morning in March.

**Frequency:** To collect their width and velocity data the students recorded one set of data at each site.

**Conclusion:** The students concluded that river width and velocity do not always increase along a river.

# Figure 4a – Diagram – Part 1

## Details of the students' river investigation

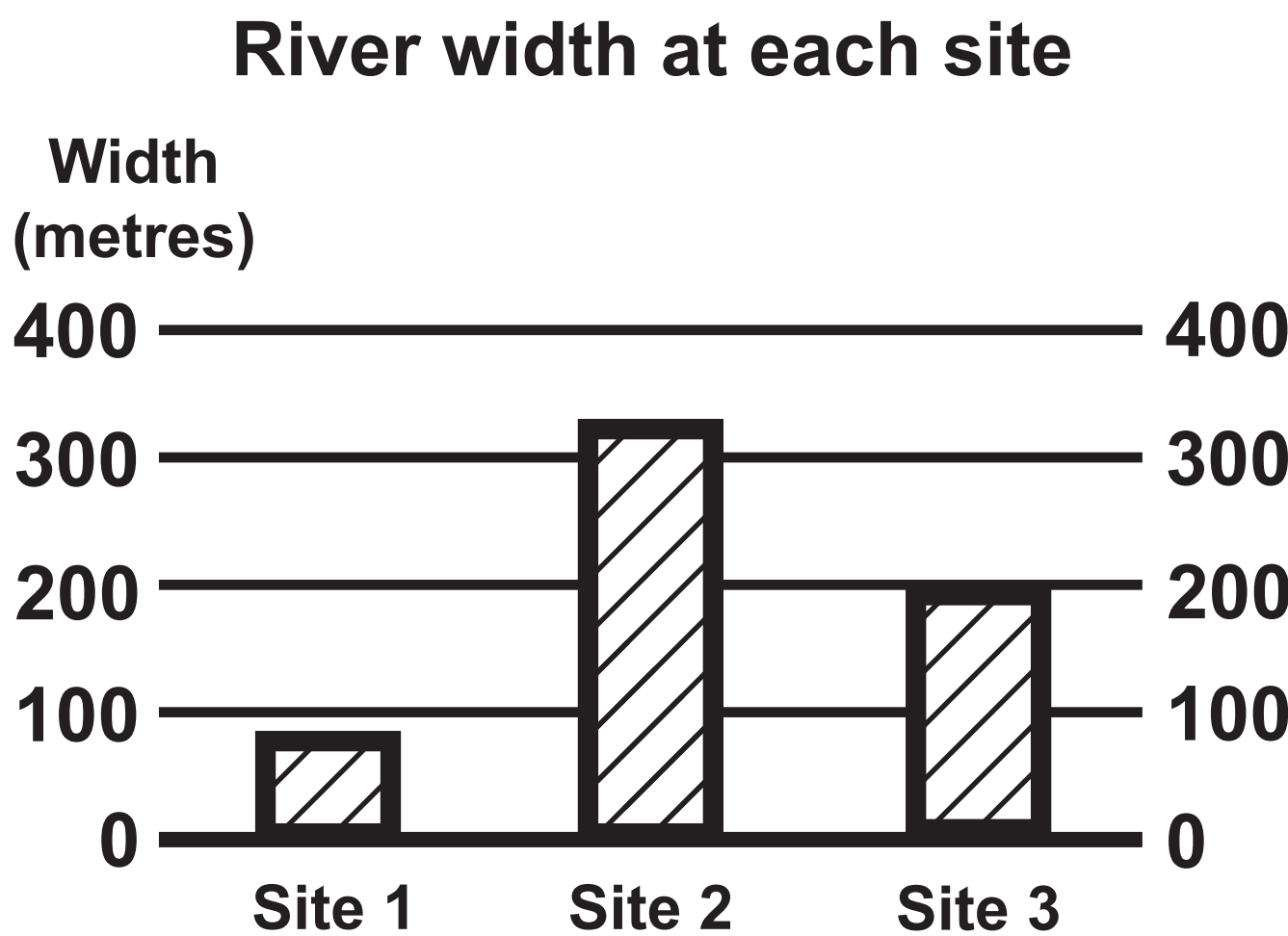
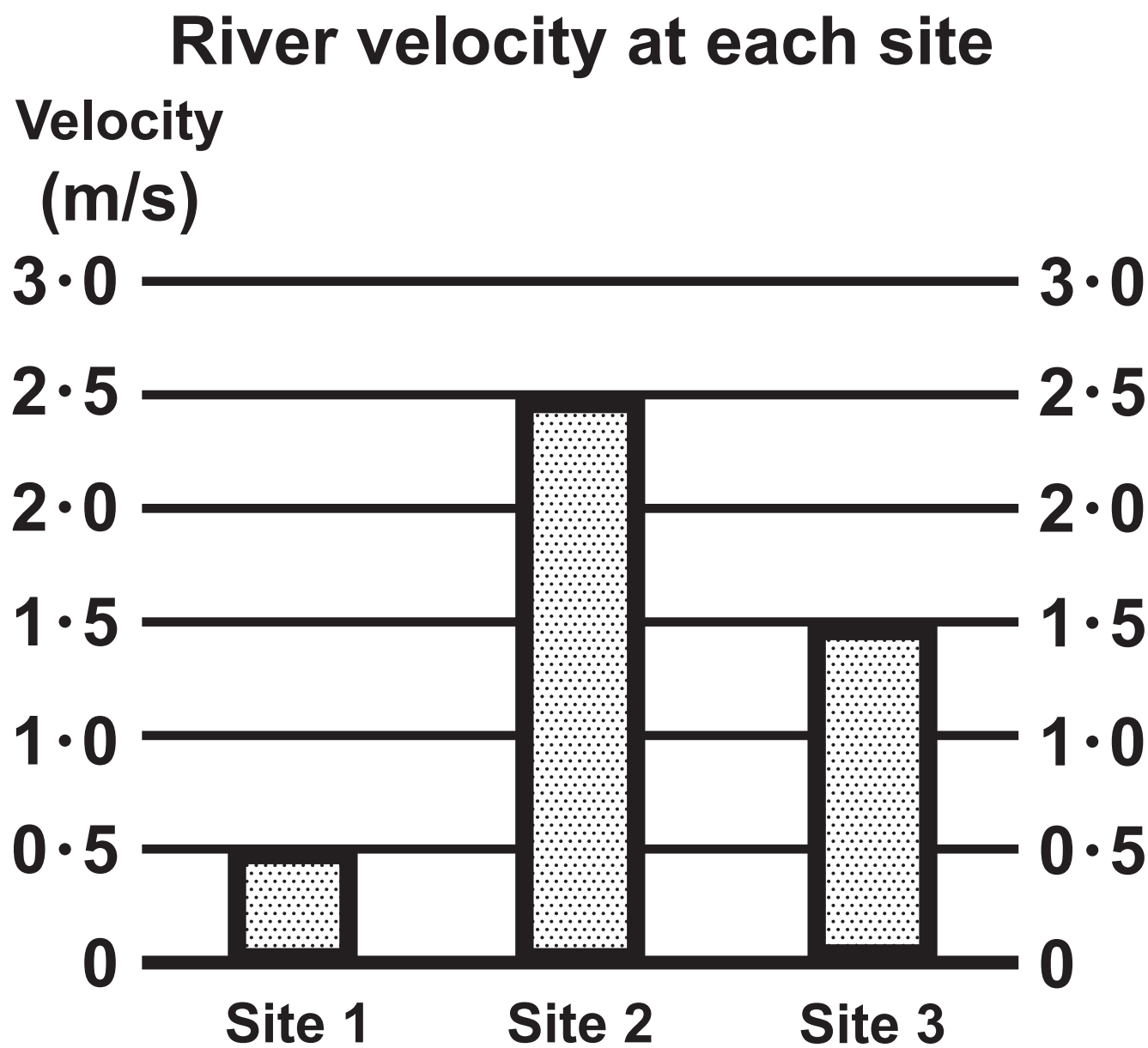


**KEY** — River



Figure 4a – Diagram – Part 2

Details of the students’ river investigation



## Figure 5a – Information

### Details of the students' coastal investigation

**A group of students carried out an investigation into how sediment size and shape change along a stretch of coastline.**

**Sampling strategy:** They chose random sampling to select the three sites where data was collected.

**Time of year:** The data was collected during one morning in March.

**Frequency:** To collect their pebble size and shape data the students recorded one set of data at each site. Different students recorded the shape data at each site.

**Conclusion:** The students concluded that pebble size stays the same along a stretch of coastline and pebble shape is mainly angular.

## Figure 5a – Diagram – Part 1

### Details of the students' coastal investigation

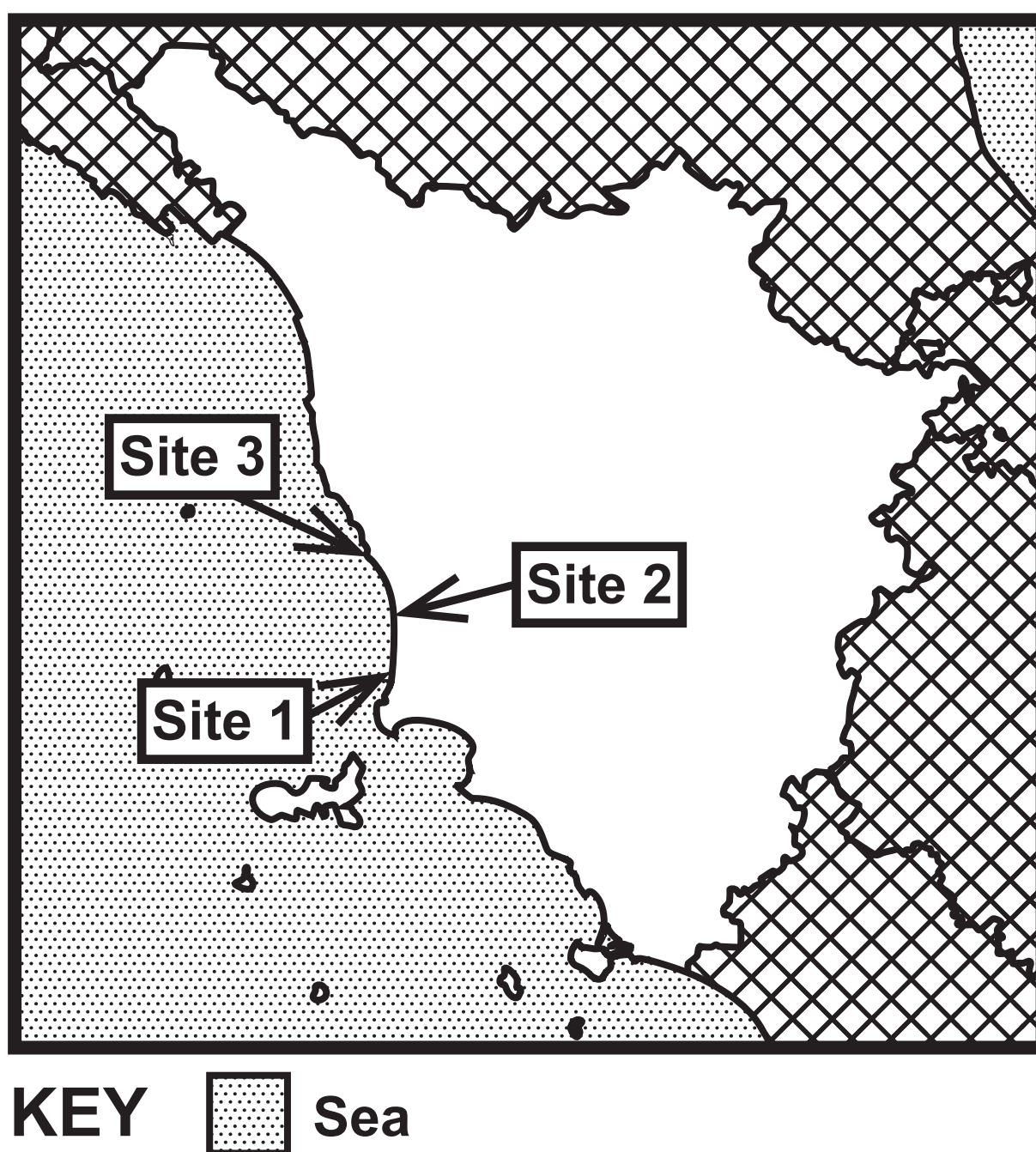
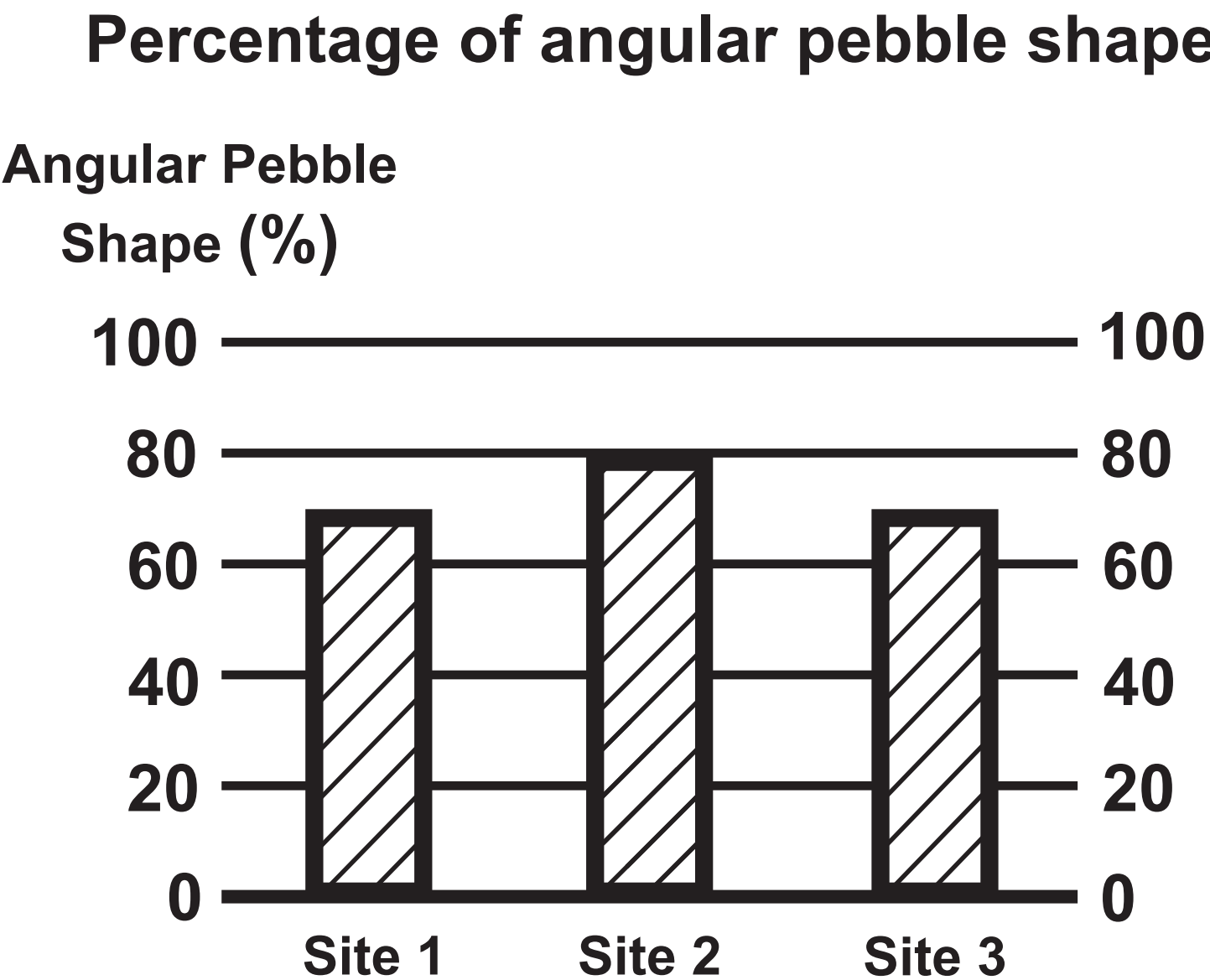
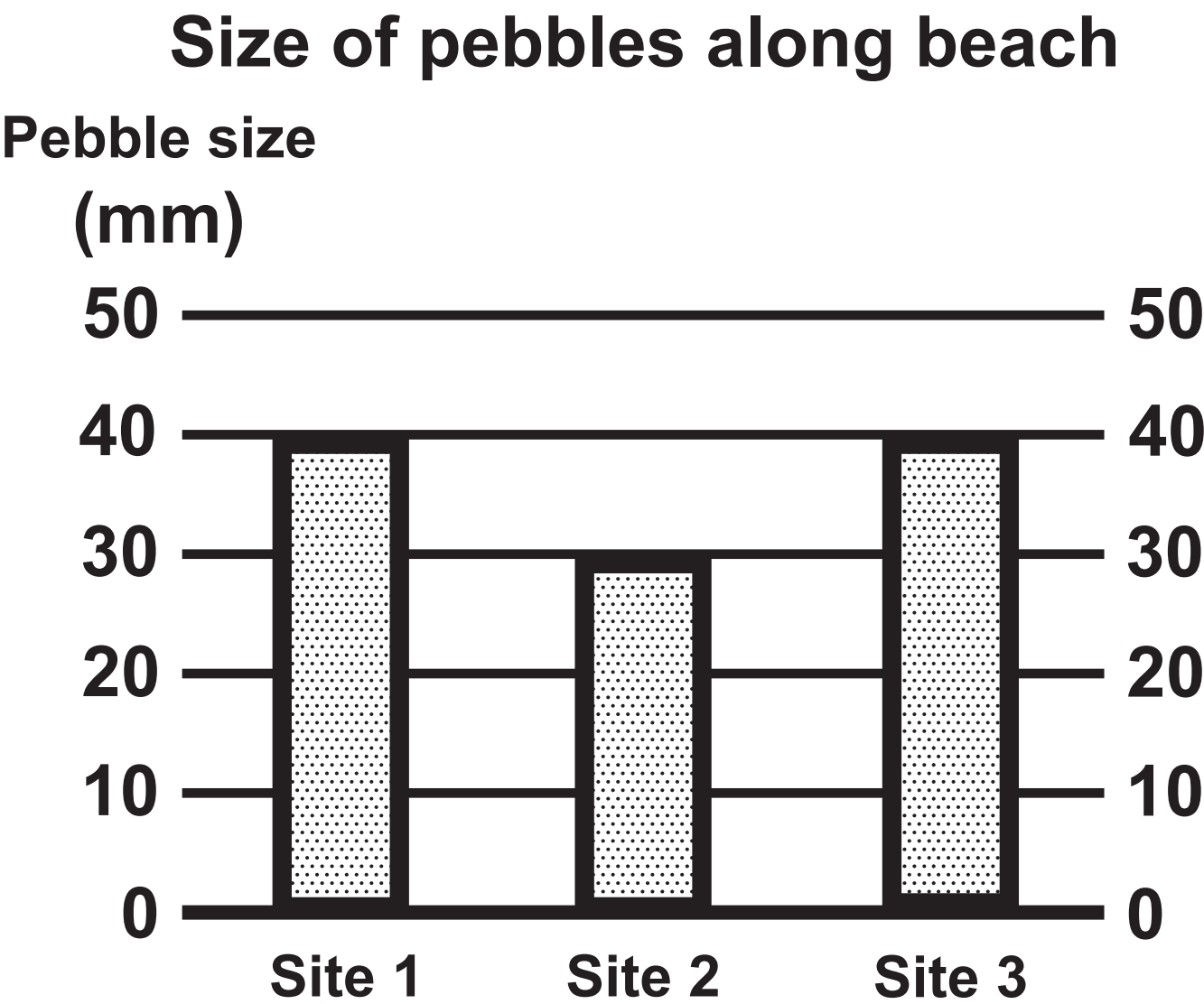


Figure 5a – Diagram – Part 2

Details of the students’ coastal investigation



## Figure 6a – Information

### Details of the students' extreme weather event investigation

A group of students carried out an investigation into how air pressure and rainfall vary in a location at risk from tropical cyclones.

**Sampling strategy:** They chose random sampling to select the three sites where data was collected.

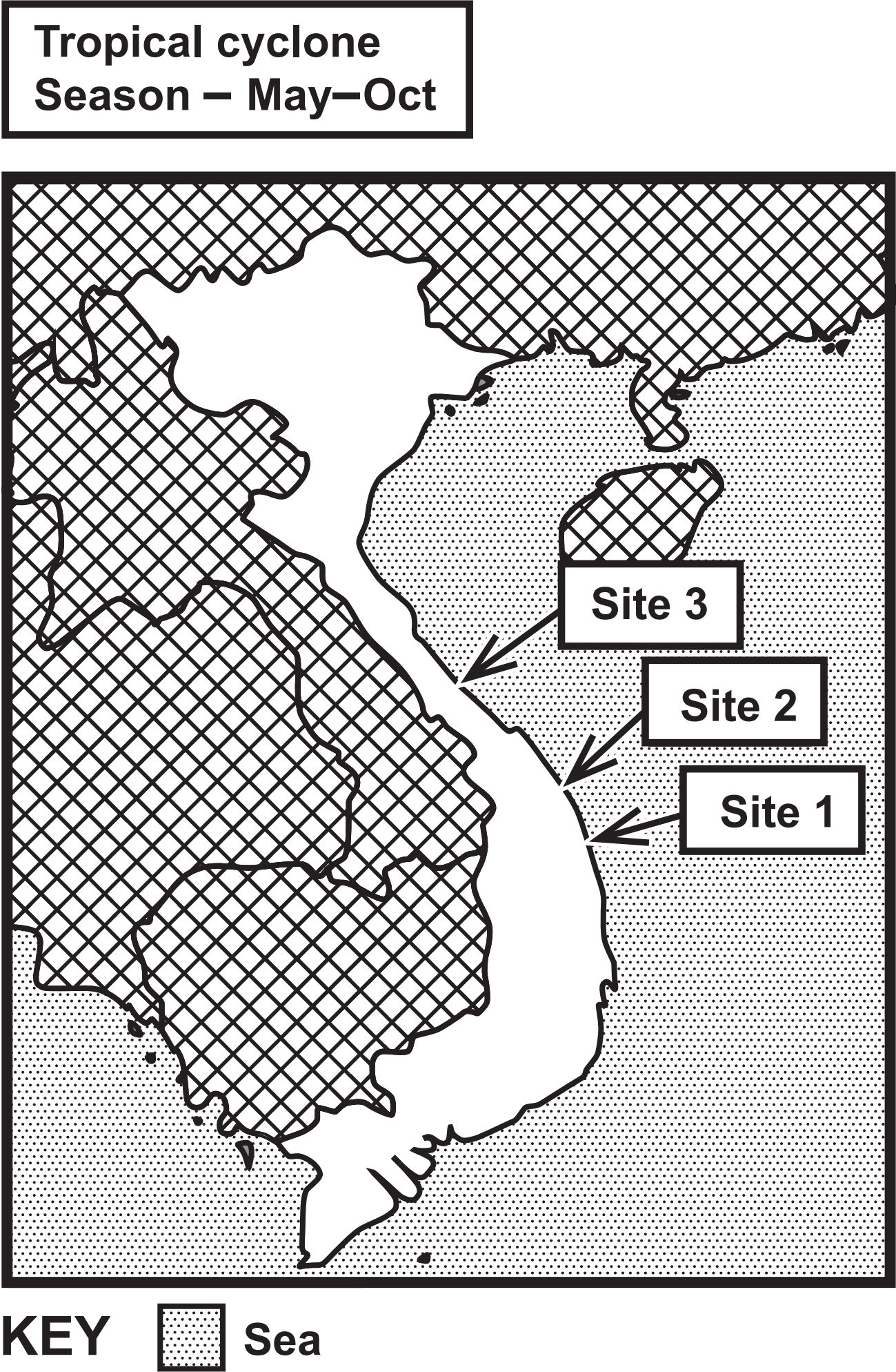
**Time of year:** The data was collected during one morning in March.

**Frequency:** To collect their rainfall and air pressure data the students recorded one set of data at each site. They measured the total rainfall after 48 hours at each site.

**Conclusion:** The students concluded that areas with lower air pressure experience more rainfall.

Figure 6a – Diagram – Part 1

Details of the students’ extreme weather event investigation

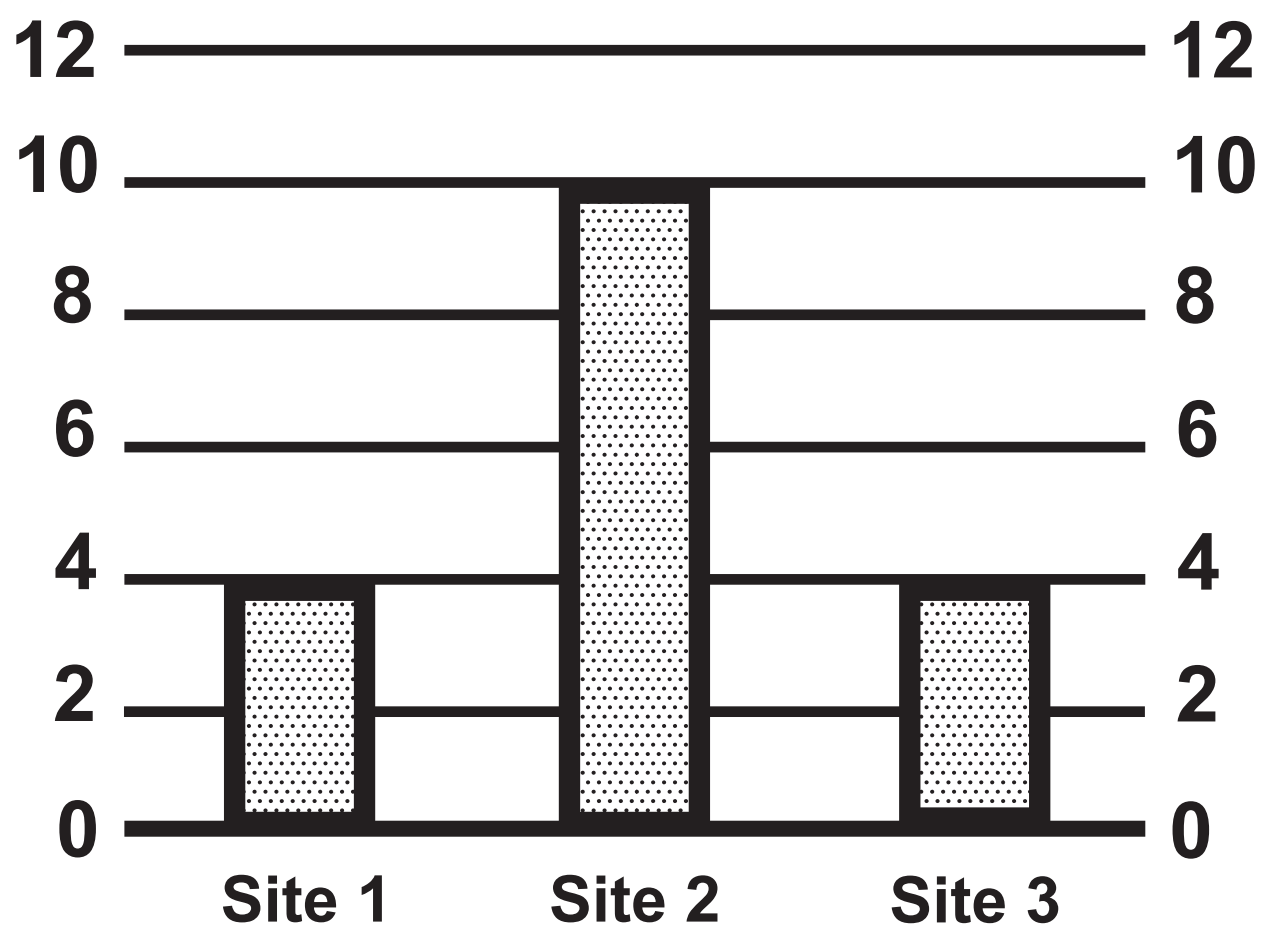


## Figure 6a – Diagram – Part 2

### Details of the students' extreme weather event investigation

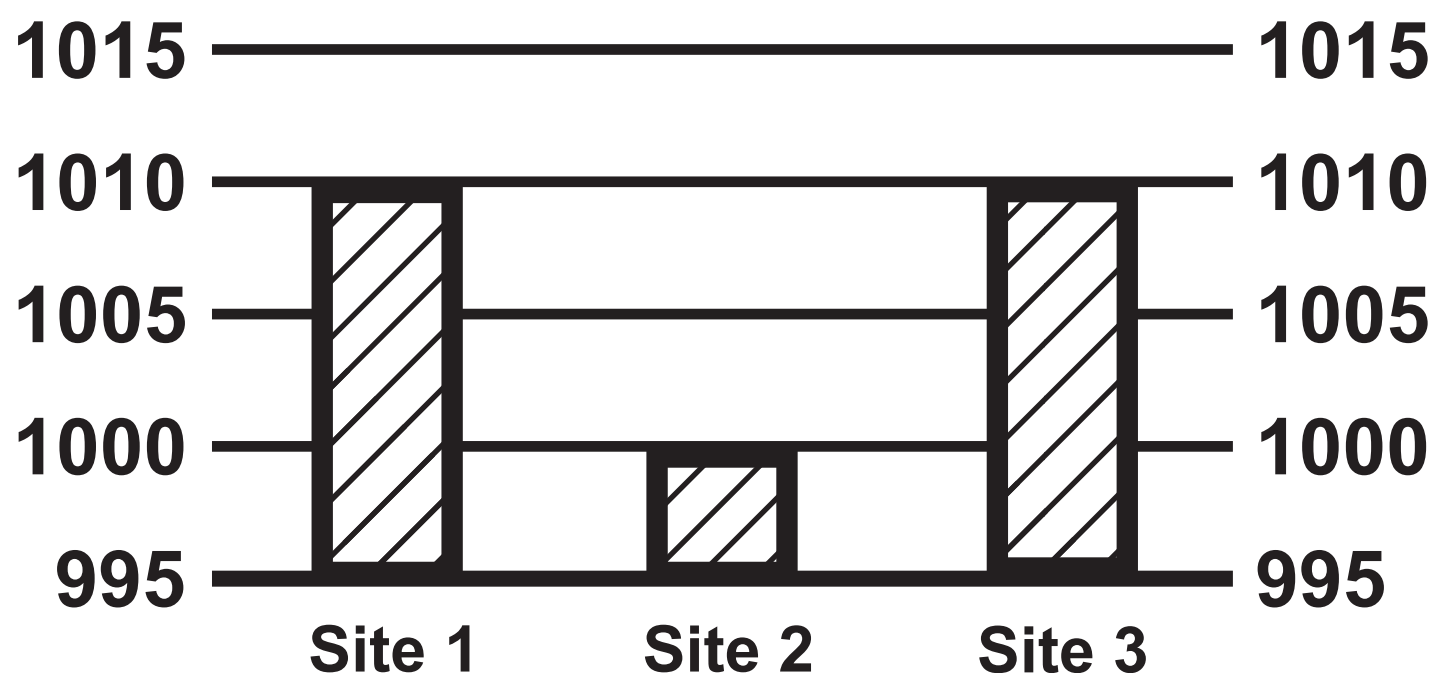
#### Amount of rainfall over 48 hours at each site

Rainfall  
(mm)



#### Air pressure at each site

Air  
Pressure  
(mb)



## Acknowledgements

**Pearson Education Ltd. gratefully acknowledges all the following sources used in the preparation of this paper:**

**Figure 1c: source adapted from: <https://www.geodata.it>**

**Figure 2b: source adapted from: ©BrianScantlebury/  
Shutterstock**

**Figure 3b: source adapted from: © Designua/Shutterstock**

**Figure 3c: source adapted from: <https://www.nps.gov>**