



**GCSE**  
**3110U20-1**

**WEDNESDAY, 5 JUNE 2024 – MORNING**

**GEOGRAPHY**

**Unit 2: Environmental and Developmental Issues**

**1 hour 30 minutes plus your additional time allowance**

**Surname**

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**First Name(s)**

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**Centre Number**

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**Candidate Number**

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## **ADDITIONAL MATERIALS**

**In addition to this paper you may use a calculator and a ruler if required.**

## **INSTRUCTIONS TO CANDIDATES**

**Use black ink, black ball-point pen or your usual method.**

**Write your name, centre number and candidate number in the spaces on the previous page.**

**Answer BOTH questions in Section A.**

**Answer ONE question from Section B.**

**Write your answers in the spaces provided in this booklet.**

**Additional space is provided for some questions within the booklet (if required). If further space is required for any question, you should use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.**

## **INFORMATION FOR CANDIDATES**

**The number of marks is given in brackets [ ] at the end of each question.**

**Your ability to communicate and organise your ideas will be assessed in questions that are worth 6 or 8 marks. The accuracy of your writing will be assessed in your answer to question 2(b)(ii).**

**(Turn over)**

**SECTION A – CORE THEMES**

Answer ALL of the questions in this section.

**THEME 5: WEATHER, CLIMATE AND ECOSYSTEMS**

1 (a) Study the diagram opposite.

(i) Complete the diagram opposite using TWO labels from the box below: [2 marks]

Photosynthesis	Contamination	Infiltration
Respiration	Decomposition	

(ii) Describe how ONE natural process transfers carbon from the land to the atmosphere. [2 marks]

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(Turn over)

**1 (a)(iii) Explain why human activity can increase the amount of carbon in the atmosphere. [2 marks]**

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1 (b) Study the information in the map opposite.

The power of exploding volcanoes is measured using a numbered scale. The scale is called the Volcanic Explosivity Index (VEI).

(i) Tick (✓) the mode of the VEI for the volcanic eruptions shown on the map. [1 mark]

MODE	TICK (✓)
6	
8	
10	

(ii) Describe the distribution of the volcanic eruptions shown on the map. [3 marks]

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(Turn over)

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**1 (b)(iii) Suggest why the eruption of Krakatoa may have caused climate change. Refer to information from the map opposite page 5 to support your answer.**

**[3 marks]**

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**(Turn over)**

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**1 (c) More intense high pressure systems are creating record temperatures in the UK.**

**Study the information opposite.**

**(i) Complete the graph by adding the 2022 temperature for Buxton. [1 mark]**

<b>Buxton</b>	<b>36</b>
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**(ii) Name the location with the largest increase in record temperature. [1 mark]**

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**(Turn over)**

1 (c)(iii) Use the graph opposite page 8 to calculate the range of temperature increase for Goudhurst.  
[2 marks]

Show your working.

Answer \_\_\_\_\_ °C

(Turn over)

1 (d) Study the resource box below and the images opposite.

**EFFECTS OF DROUGHT IN AUSTRALIA, 2019–2020**

- Long-lasting high pressure resulted in low rainfall and high temperatures.
- This was the warmest period on record in most of Australia.
- Large numbers of fish died due to lack of water in rivers.
- Many parts of Australia experienced extreme water stress.
- Extreme water restrictions left many farmers unable to plant crops.
- Many tourists stayed away from drought-affected areas.
- 18 million hectares were burned in wildfires, destroying 5900 buildings.
- An estimated one billion animals died as a result of the wildfires.

(Turn over)





**Additional space for question 1(d) only:**

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1 (e)(i) Define the term National Parks. Tick (✓) ONE box in the table below. [1 mark]

DEFINITION	TICK (✓)
An area of land divided into zones to protect wildlife.	
Land where strips of vegetation cover allow animals to move freely.	
An area of important landscape, protected for people to enjoy.	

(ii) Explain why creating National Parks is used as a strategy to manage habitats. [4 marks]

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(Turn over)

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**END OF QUESTION 1**

**(Turn over)**

**THEME 6: DEVELOPMENT AND RESOURCE ISSUES**

**2 (a) Study the information opposite.**

**WATER STRESS** occurs when the demand for water in an area is more than the water available for supply in that area.

**(i) Identify the mapping technique shown opposite.**

**[1 mark]**

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**(ii) Describe the pattern of areas predicted to have very high levels of water stress in 2040. [2 marks]**

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**(Turn over)**

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**2 (a)(iii) Use the map opposite page 16 to give the predicted water stress level for the USA.**

**[1 mark]**

**Answer:** \_\_\_\_\_ %

**(iv) Give ONE reason why agricultural change leads to increased demand for water. [2 marks]**

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**(Turn over)**

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**2 (a)(v) Give TWO strategies used to manage water resources. [2 marks]**

**Strategy 1:** \_\_\_\_\_

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**Strategy 2:** \_\_\_\_\_

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**(vi) Explain why the management of water resources at an international scale can have economic and environmental consequences. [6 marks]**

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**(Turn over)**



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**2 (b) Study the resource box opposite and the table opposite page 22.**

**(i) Use the map to complete the table, giving the height above sea level for the two regions in China.**

**[2 marks]**

**(ii) Countries have differences in the level of economic development between their regions.**

**Three factors that contribute towards these regional inequalities are:**

**Economic**

**Social**

**Environmental**

**Evaluate these factors that result in inequalities between regions. [8 marks]**

**You must refer to the information on the map opposite and the table opposite page 22. You may use examples you have studied to support your answer.**

**The accuracy of your writing will be assessed in your answer to this question. [3 marks]**



**(Turn over)**





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**Additional space for Question 2(b)(ii) only:**

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**2 (c) Levels of economic development also vary within Wales.**

**Describe ONE economic and ONE social impact of uneven development within Wales. [4 marks]**

**Economic:** \_\_\_\_\_

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**Social:** \_\_\_\_\_

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**(Turn over)**

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**END OF QUESTION 2**

**(Turn over)**

**SECTION B – OPTIONS**

Answer ONE question in this section, EITHER Question 3 OR Question 4.

**THEME 7: SOCIAL DEVELOPMENT ISSUES**

3 (a) Study the table below.

**SOCIAL DEVELOPMENT INDICATORS FOR EGYPT AND THE UK**

	EGYPT		UK	
	2000	2019	2000	2019
Literacy rate (%)	61	71.2	99	99
Access to electricity (%)	97.7	100	100	100
Net migration	-74 000	-190 000	992 000	1 303 000
Carbon dioxide emissions (metric tonnes per capita)	1.7	2.5	9	5.2

(Turn over)

3 (a)(i) Use the table on page 28 to **circle** the correct response in the sentences below.

[2 marks]

From 2000 to 2019:

Literacy rates in Egypt have increased by ( 10.2% / 11% / 12.1% ).

Carbon dioxide emissions in the UK have nearly ( HALVED / DOUBLED / TRIPLED ).

(ii) Describe how the development gap is changing between Egypt and the UK. Use evidence from the table on page 28. [4 marks]

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**3 (a)(iii) There are other indicators of social development.**

**Give ONE health and ONE gender indicator used to measure social development. [2 marks]**

**Health indicator:** \_\_\_\_\_

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**Gender indicator:** \_\_\_\_\_

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**(Turn over)**



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**3 (b)(ii) Describe ONE consequence of child labour.**

**[2 marks]**

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**END OF QUESTION 3**

**(Turn over)**

If you have answered Question 3 then DO NOT answer Question 4.

## THEME 8: ENVIRONMENTAL CHALLENGES

4 (a) Study the table below.

### E-WASTE DATA FOR CHINA AND THE UK

	CHINA		UK	
	2015	2019	2015	2019
<b>E-waste generated (in kilotons)</b>	<b>8045</b>	<b>10 129</b>	<b>1483</b>	<b>1598</b>
<b>Percentage of e-waste that is collected for recycling (%)</b>	<b>16</b>	<b>16</b>	<b>45</b>	<b>58</b>
<b>Weight of e-waste that is collected for recycling (in kilotons)</b>	<b>1412</b>	<b>1546</b>	<b>663</b>	<b>871</b>
<b>Population (million)</b>	<b>1370</b>	<b>1400</b>	<b>65.1</b>	<b>66.8</b>

(Turn over)

4 (a)(i) Use the table on page 37 to **circle** the correct response in the sentences below.

[2 marks]

From 2015 to 2019:

The population in the UK has increased by ( 1.7m / 2.7m / 3.1m ).

The percentage of e-waste collected for recycling in the UK has increased by nearly ( A HALF

/ THREE QUARTERS / A THIRD ).

(ii) Compare the changing approach to e-waste in China and the UK. Use evidence from the table on page 37.

[4 marks]

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(Turn over)



**4 (a)(iii) Give ONE impact e-waste has on people and ONE impact it has on the environment. [2 marks]**

**People:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Environment:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4 (b) The global average temperature today is estimated to be 1.17°C higher than it was 100 years ago.**

**(i) Describe ONE short-term effect of climate change experienced in the UK. [2 marks]**

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<b>QUESTION NUMBER</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

(Turn over)

<b>QUESTION NUMBER</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

(Turn over)

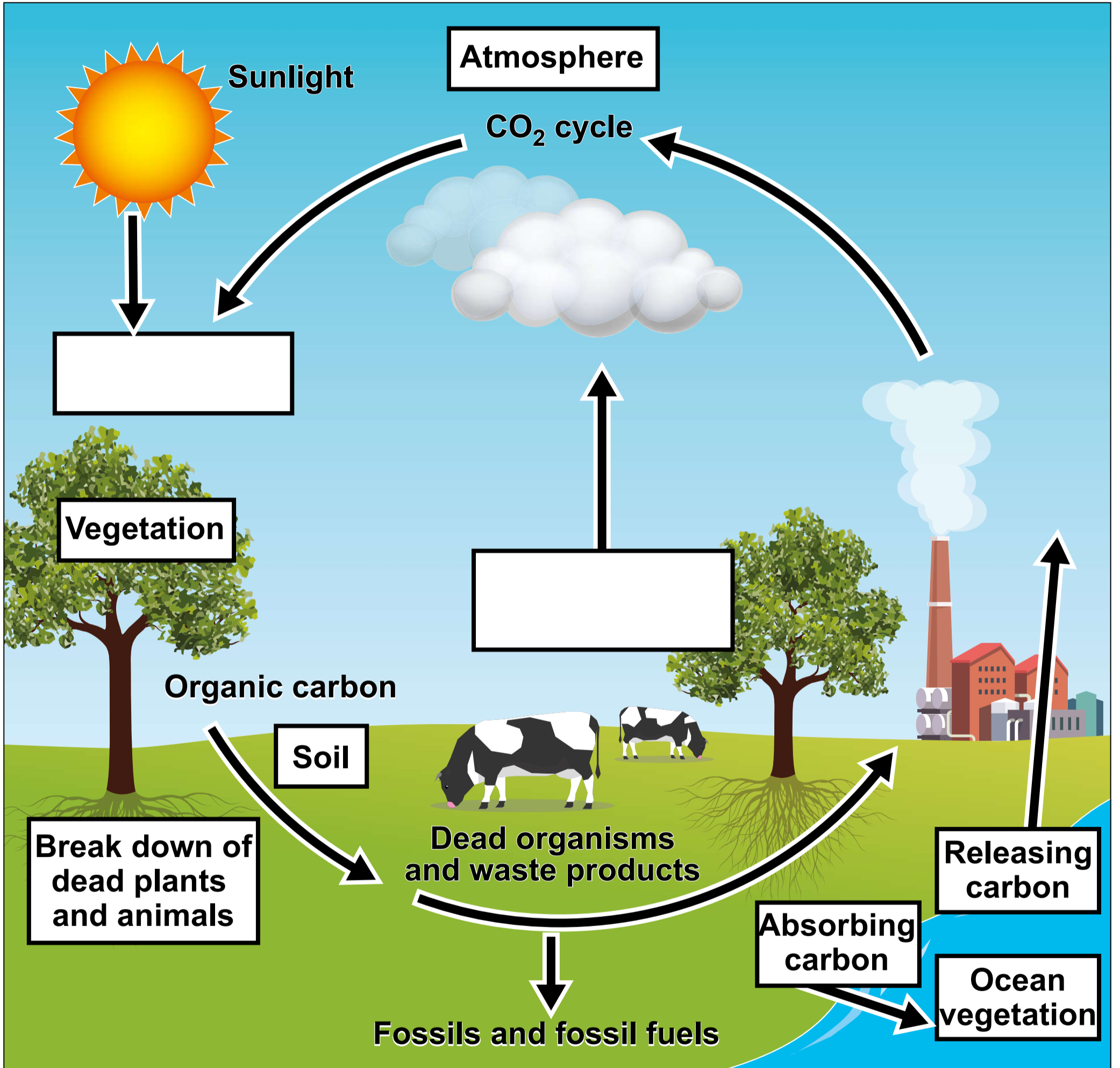
<b>QUESTION NUMBER</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

<b>QUESTION NUMBER</b>	<b>ADDITIONAL PAGE, IF REQUIRED. WRITE THE QUESTION NUMBER(S) IN THE LEFT-HAND MARGIN.</b>

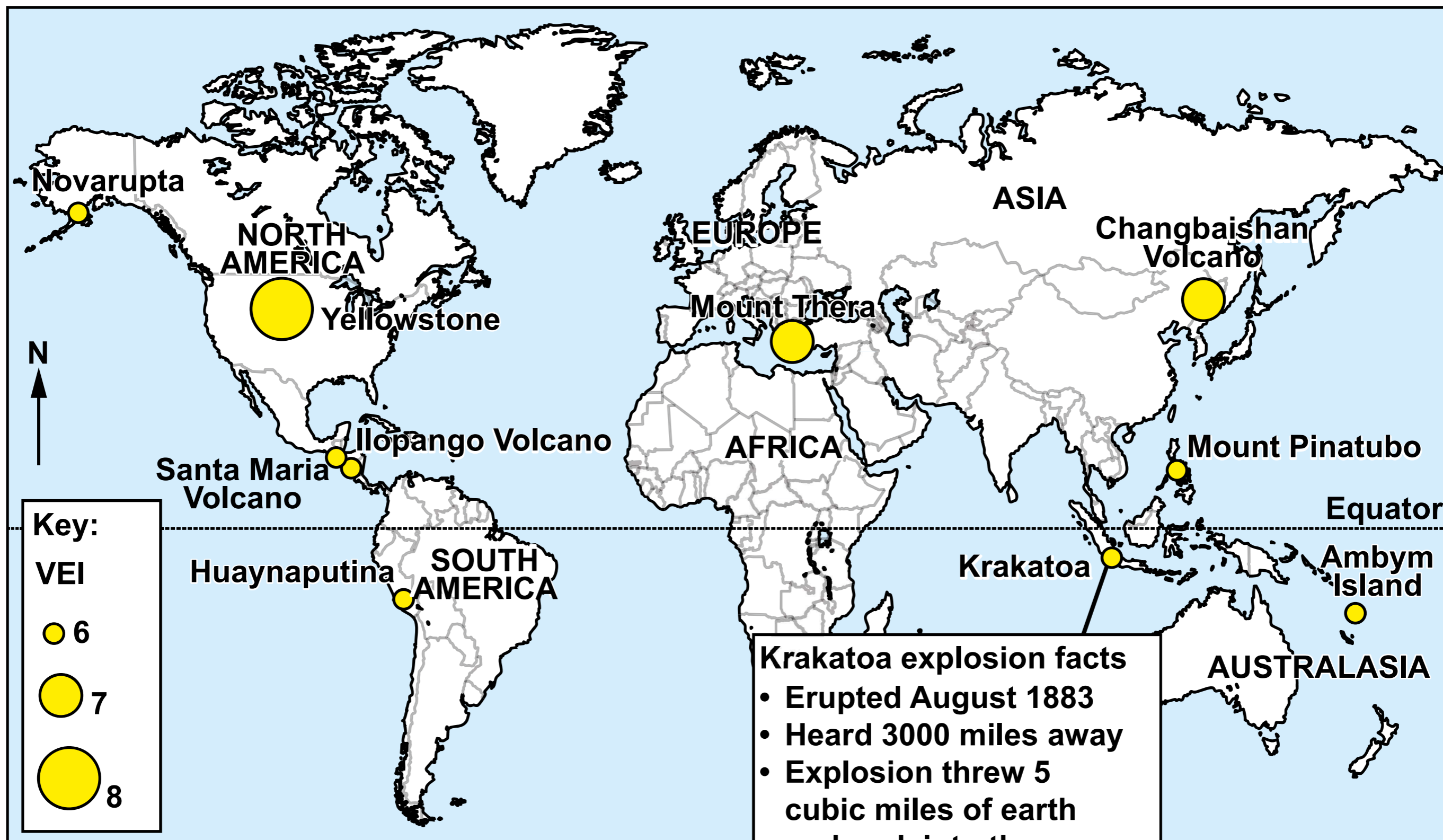
<b>For Examiner's use only</b>		
	<b>Maximum Mark</b>	<b>Mark Awarded</b>
<b>Question 1</b>	<b>28</b>	
<b>Question 2</b>	<b>28</b>	
<b>Writing accurately</b>	<b>3</b>	
<b>Question 3</b>	<b>24</b>	
<b>Question 4</b>	<b>24</b>	
<b>Total</b>	<b>83</b>	

either  
or

# THE CARBON CYCLE

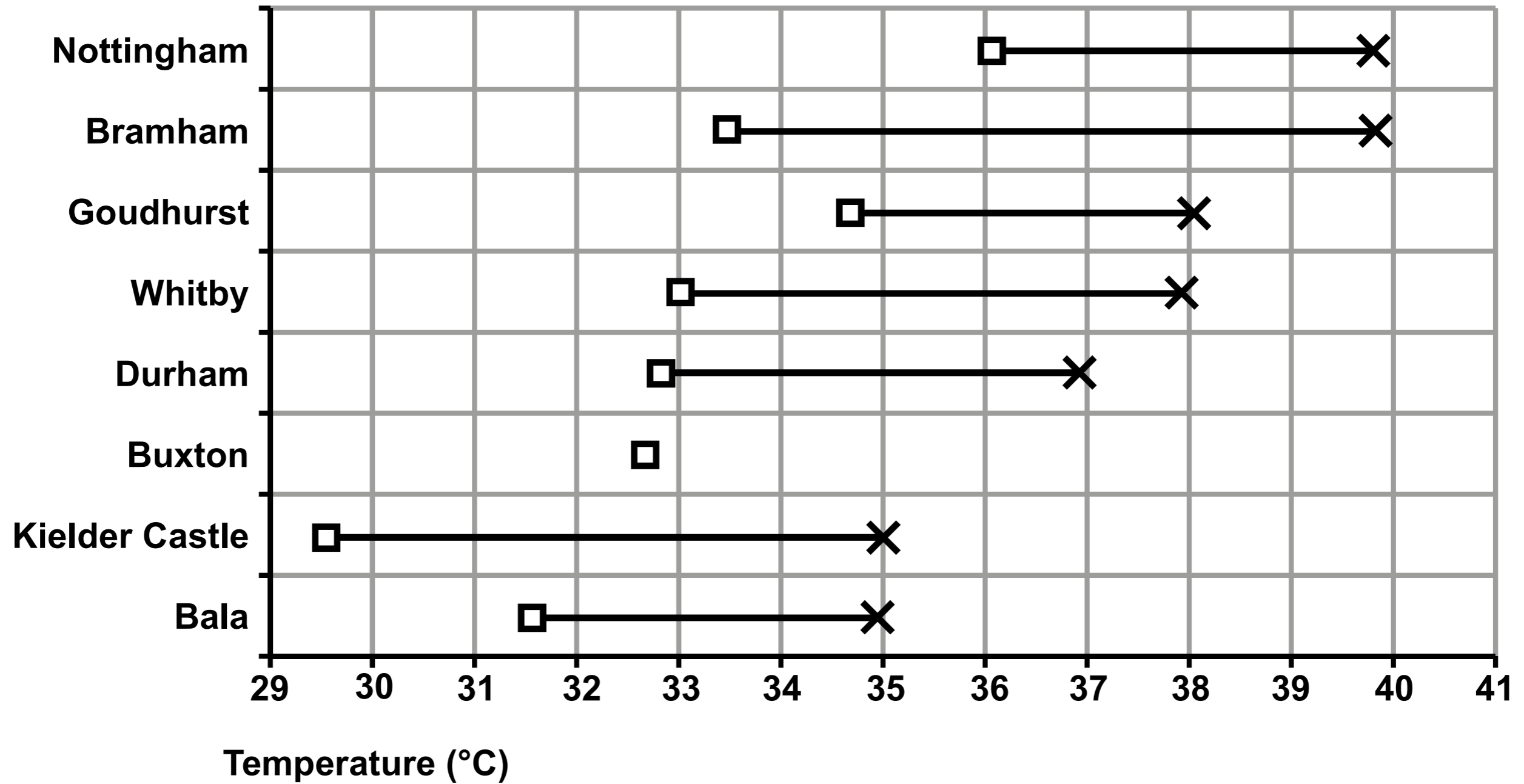


# VEI FIGURES FOR SELECTED WORLD VOLCANOES



# LOCATIONS WITH A LARGE INCREASE IN RECORD TEMPERATURES IN 2022

## UK Locations



Key: □ = previous record    X = 2022 record

# EFFECTS OF DROUGHT IN AUSTRALIA, 2019-2020

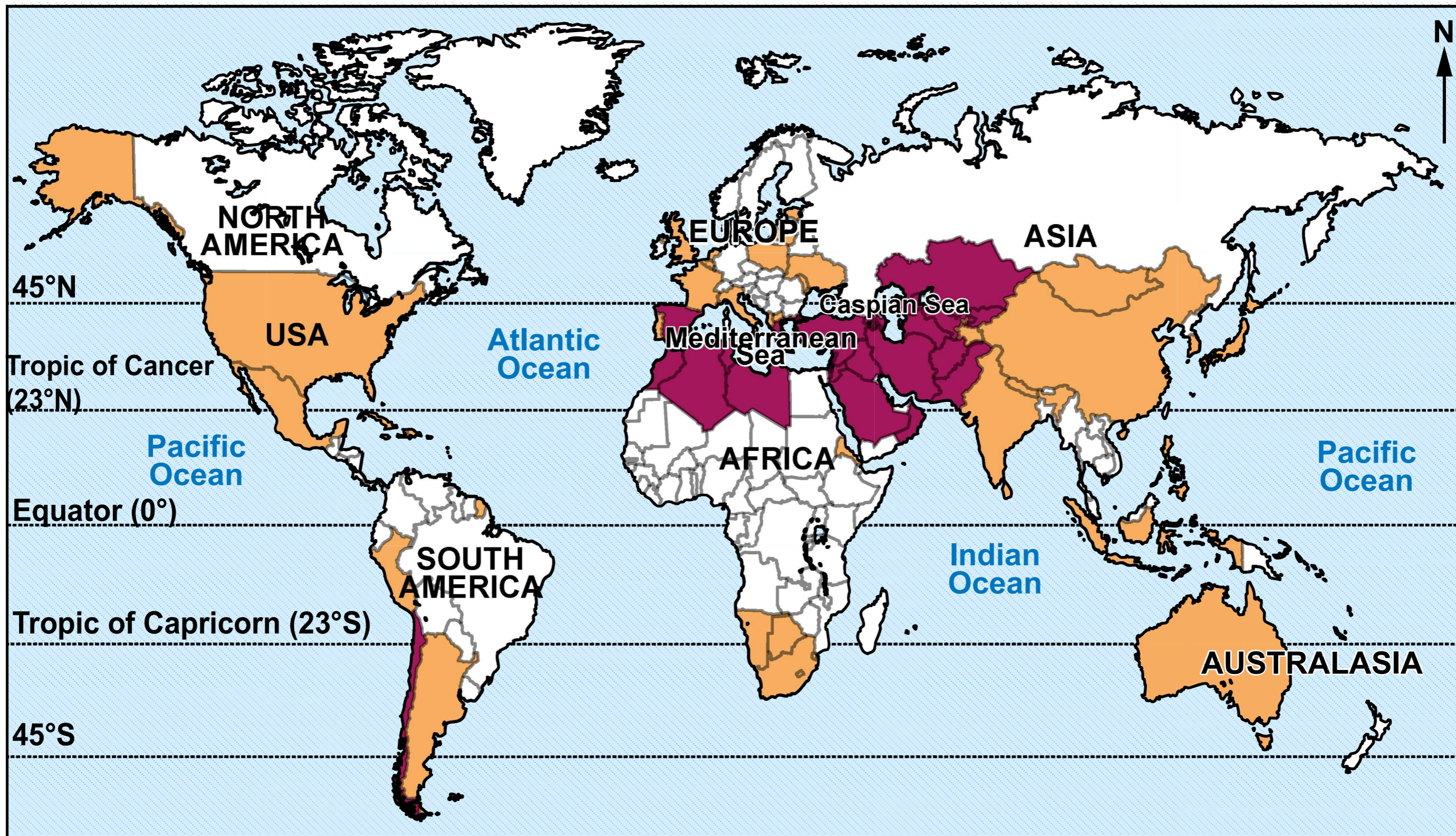
**Failed crops**



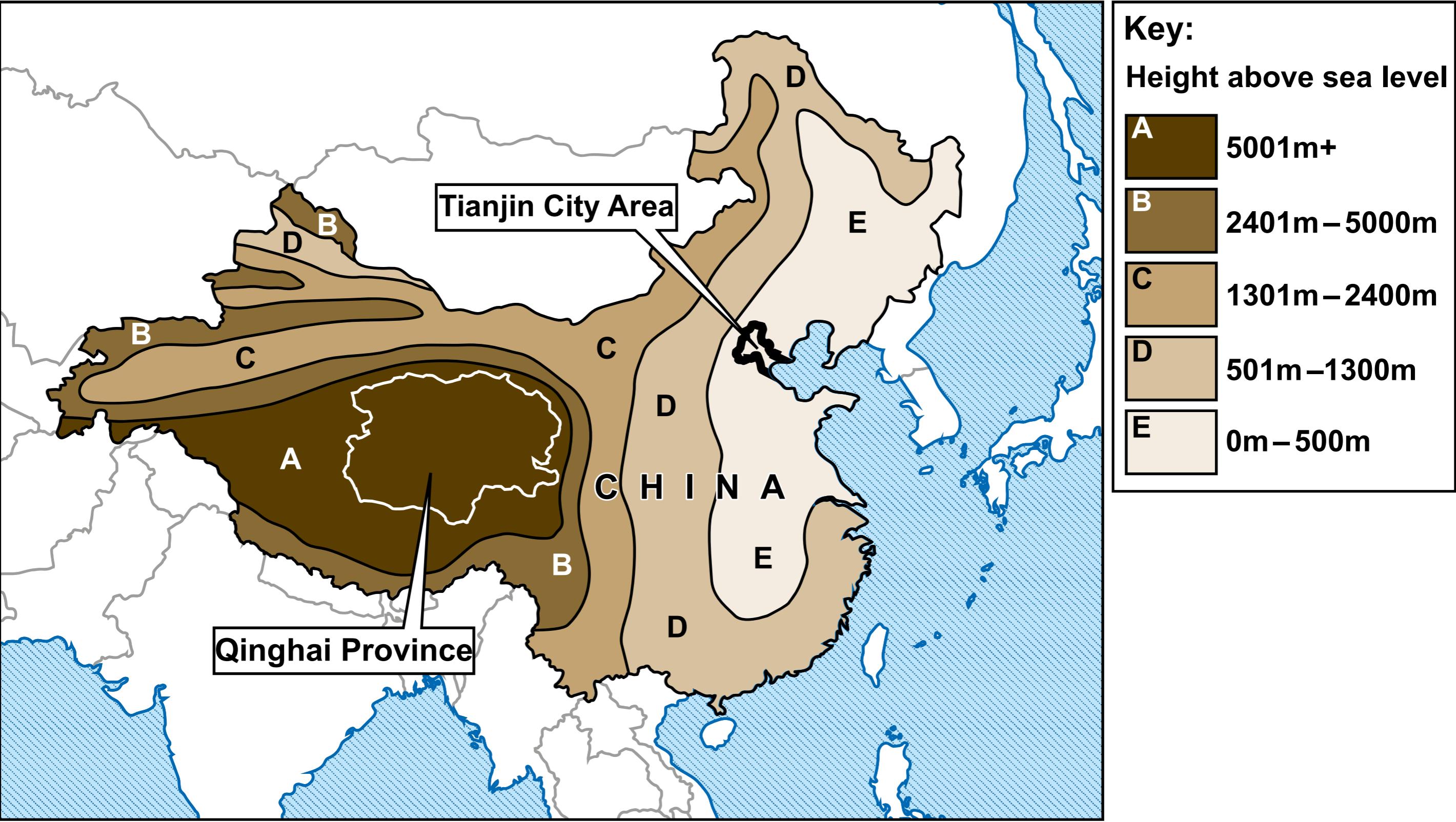
**Wildfires endangering wildlife**



# PREDICTED WATER STRESS BY COUNTRY IN 2040



# THE LOCATIONS OF TIANJIN CITY AREA AND QINGHAI PROVINCE, CHINA



		<b>TIANJIN CITY AREA</b>	<b>QINGHAI PROVINCE</b>
	<b>Region of China</b>	<b>North</b>	<b>Northwest</b>
	<b>GDP (USD)</b>	<b>204 billion</b>	<b>43 billion</b>
<b>Development Indicators</b>	<b>Major industries</b>	<b>Petrochemical, textiles &amp; car manufacturing</b>	<b>Iron &amp; steel production, saltworks</b>
	<b>Infant mortality rate (number of deaths per 1000 live births)</b>	<b>2.3</b>	<b>43.1</b>
	<b>Literacy rate (percentage of the population that can read and write)</b>	<b>95.2</b>	<b>75.9</b>
	<b>Human Development Index (measures development by considering education, life expectancy and average income, a higher figure equals greater development)</b>	<b>0.838</b>	<b>0.689</b>
<b>Other factors</b>	<b>Distance from the coast (km)</b>	<b>0</b>	<b>1300</b>
	<b>Population (million)</b>	<b>13.8</b>	<b>5.9</b>
	<b>Height above sea level (m)</b>	<b>_____</b>	<b>_____</b>
	<b>Temperature range</b>	<b>-3.4 to 26.8°C</b>	<b>-5 to 8°C</b>

# EXAMPLES OF DIFFERENT STRATEGIES USED TO REDUCE CHILD LABOUR

## LOCAL STRATEGIES

Primary school in Togo, West Africa



Sign against child labour in Ghana



## GLOBAL STRATEGIES

Global conference on child labour



World day against child labour



# EXAMPLES OF DIFFERENT STRATEGIES USED TO TACKLE CLIMATE CHANGE

## INDIVIDUAL STRATEGIES

### Cyclists in Amsterdam



### Volunteers planting trees



## GOVERNMENT STRATEGIES

### United Nations Climate Change Conference



### Offshore wind farm

