



GCSE

C111U20-1



WEDNESDAY, 5 JUNE 2024 – MORNING

GEOGRAPHY A – Component 2

Environmental and Development Issues

1 hour 30 minutes plus your additional time allowance

Surname

First name(s)

Centre Number

Candidate Number

0

ADDITIONAL MATERIALS

A calculator and a ruler if required.

INSTRUCTIONS TO CANDIDATES

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

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of the previous page.

Answer BOTH questions in Section A.

Answer ONE question in Section B.

Write your answers in the spaces provided in this booklet.

(Turn over)

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 end of this booklet. The question number(s) should be clearly shown.

INFORMATION FOR CANDIDATES

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

Your ability to spell, punctuate and use grammar and specialist terminology accurately will be assessed in your answer to Question 2(d)(iii).

(Turn over)

SECTION A: CORE THEMES

Answer ALL questions in this section.

THEME 5: WEATHER, CLIMATE AND ECOSYSTEMS

1 (a)(i) Ice cores can provide evidence of climate change.

Tick (✓) the correct definition of an ice core from the list below.

[1 mark]

DEFINITION	TICK (✓)
Ice which breaks off a glacier and floats in water.	
A large area of ice which covers polar regions.	
A long cylinder of ice collected by drilling into an ice cap.	

(Turn over)

Study GRAPH 1.1 and GRAPH 1.2 opposite.

- (ii) Give ONE conclusion you can draw from these graphs. Use data in your answer. [2 marks]**

(Turn over)

1 (a)(iii) Give ONE reason why volcanic activity can cause global cooling.
[2 marks]

(Turn over)

1 (b)(i) Define microclimate. [1 mark]

(ii) Explain TWO factors which influence microclimates. [4 marks]

Factor 1: _____

(Turn over)

Factor 2: _____

(Turn over)

- 1 (c) (i) Study the table below.
Tick (✓) the correct definition of a biome. [1 mark]

DEFINITION	TICK (✓)
A small-scale ecosystem.	
A large-scale ecosystem.	
How energy is transferred between living things.	

- (ii) Describe the characteristics of the tropical rainforest climate. [4 marks]

(Turn over)

(Turn over)

1 (c)(iii) Give ONE way that tropical rainforests benefit people.

[1 mark]

(Turn over)

Study MAP 1.3 opposite.

1 (c)(iv) Describe the location of Manaus within Brazil. [3 marks]

(Turn over)

Study TABLE 1.4 below.

**TABLE 1.4: AVERAGE MONTHLY RAINFALL
IN MANAUS, BRAZIL**

	MILLIMETRES
January	263.9
February	262.0
March	297.9
April	282.7
May	203.7
June	103.1
July	66.9
August	45.6
September	63.0
October	111.1
November	161.0
December	219.8

(Turn over)

- 1 (c)(v) Calculate the median value in millimetres for monthly rainfall in Manaus. [2 marks]**

Show your working.

Answer _____ mm

(Turn over)

1 (c)(vi) Suggest a type of graph that could be used to present this data.

[1 mark]

(vii) Explain why human activity can modify water cycles in rainforests.

[4 marks]

(Turn over)

(Turn over)

1 (d) Study RESOURCE BOX 1.5 opposite.

Evaluate the factors responsible for the changes to this area of rainforest.

[8 marks]

(Turn over)

[illegible]

(Turn over)

(Turn over)

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Additional space for 1(d) only:

END OF QUESTION 1

(Turn over)

THEME 6: DEVELOPMENT AND RESOURCE ISSUES

2 (a) Study GRAPH 2.1 opposite. GDP (Wealth) is one way of measuring economic development.

(i) Describe the percentage change in GDP in Zambia between 2010 and 2021.

[3 marks]

(Turn over)

2 (a)(ii) Give ONE reason why a bar graph is a suitable technique to present this data. [2 marks]

2 (a)(iii) Give ONE cause of uneven development on a global scale.

[1 mark]

(Turn over)

2 (a)(iv) Tick (✓) the correct description of development continuum from the list below. [1 mark]

DEFINITION	TICK (✓)
The different stages of development on a scale from the richest to poorest countries.	
The difference in wealth between the richest and poorest countries.	
A development indicator that can be used to show the total wealth of a country.	

(Turn over)

2 (b)(i) Describe ONE cause of the north-south divide in the UK. [2 marks]

2 (b)(ii) Explain why regional inequality in the UK has social and economic consequences.

[6 marks]

(Turn over)

(Turn over)

2 (c)(i) MNCs often locate in LICs and/or NICs.

Describe ONE advantage of this for development in these countries.

[2 marks]

(Turn over)

2 (c)(ii) Give TWO causes of the globalisation of tourism.

[2 marks]

Cause 1: _____

Cause 2: _____

(Turn over)

2 (c)(iii) Give TWO reasons why the globalisation of tourism has an impact on the environment in LICs and/or NICs. [4 marks]

Reason 1: _____

(Turn over)

Reason 2: _____

(Turn over)

2 (d)(i) Study GRAPH 2.2 opposite.

The total amount of freshwater used in Zambia is 1.6 BILLION m³.

Calculate the amount of freshwater used in agriculture in Zambia.

[2 marks]

Show your working.

Answer _____ billion m³

(Turn over)

2 (d)(ii) Suggest an alternative technique to present the information in GRAPH 2.2. [1 mark]

(Turn over)

**2 (d)(iii) Study RESOURCE BOX 2.3
opposite.**

**Managing water resources
sustainably is challenging in
countries such as Zambia.**

How far do you agree? [8 marks]

**Your ability to spell, punctuate and
use grammar and specialist
terminology accurately will be
assessed in your answer to this
question. [4 marks]**

(Turn over)

(Turn over)

(Turn over)

(Turn over)

Additional space for 2(d)(iii) only:

(Turn over)

END OF QUESTION 2

(Turn over)

SECTION B: OPTIONS

**Answer ONE question in this section.
Choose EITHER Question 3 (Theme 7) OR
Question 4 (Theme 8).**

THEME 7: SOCIAL DEVELOPMENT

- 3 (a)(i) Birth and death rates can be used
to measure levels of social
development. Give TWO other ways
of measuring social development.
[2 marks]**

Way 1: _____

(Turn over)

Way 2: _____

3 (a)(ii) Give TWO reasons why birth rates are declining in some countries in South Asia and Sub-Saharan Africa. [4 marks]

Reason 1: _____

(Turn over)

Reason 2: _____

(Turn over)

3 (a)(iii) Study GRAPH 3.1 opposite.

YEAR	POPULATION (millions)
2050	45

Complete the graph using the data in the table. [2 Marks]

(Turn over)

3 (b) Study RESOURCE BOX 3.2 opposite.

Evaluate the strategies for tackling health issues on a local scale in countries such as Mali. [8 marks]

(Turn over)

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Additional space for question 3(b) only:

END OF QUESTION 3

(Turn over)

THEME 8: ENVIRONMENTAL CHALLENGES

If you have answered Question 3, DO NOT answer this question.

4 (a)(i) Consumerism has impacts on the environment through agribusiness.

Give TWO impacts that agribusiness has on the environment. [2 marks]

Impact 1: _____

(Turn over)

Impact 2: _____

4 (a)(ii) Give TWO reasons why climate change is having a negative impact on people. [4 marks]

Reason 1: _____

(Turn over)

Reason 2: _____

(Turn over)

4 (a)(iii) Study GRAPH 4.1 opposite.

YEAR	MILLION TONNES OF CO₂
2020	400

**Complete the graph using the data
in the table. [2 marks]**

(Turn over)

**4 (b) Study RESOURCE BOX 4.2 opposite.
Evaluate the strategies for tackling
climate change on an international
scale. [8 marks]**

(Turn over)

(Turn over)

(Turn over)

(Turn over)

Additional space for question 4(b) only:

END OF QUESTION 4

END OF PAPER

(Turn over)

Question Number	Additional page, if required. Write the question number(s) in the left-hand margin.

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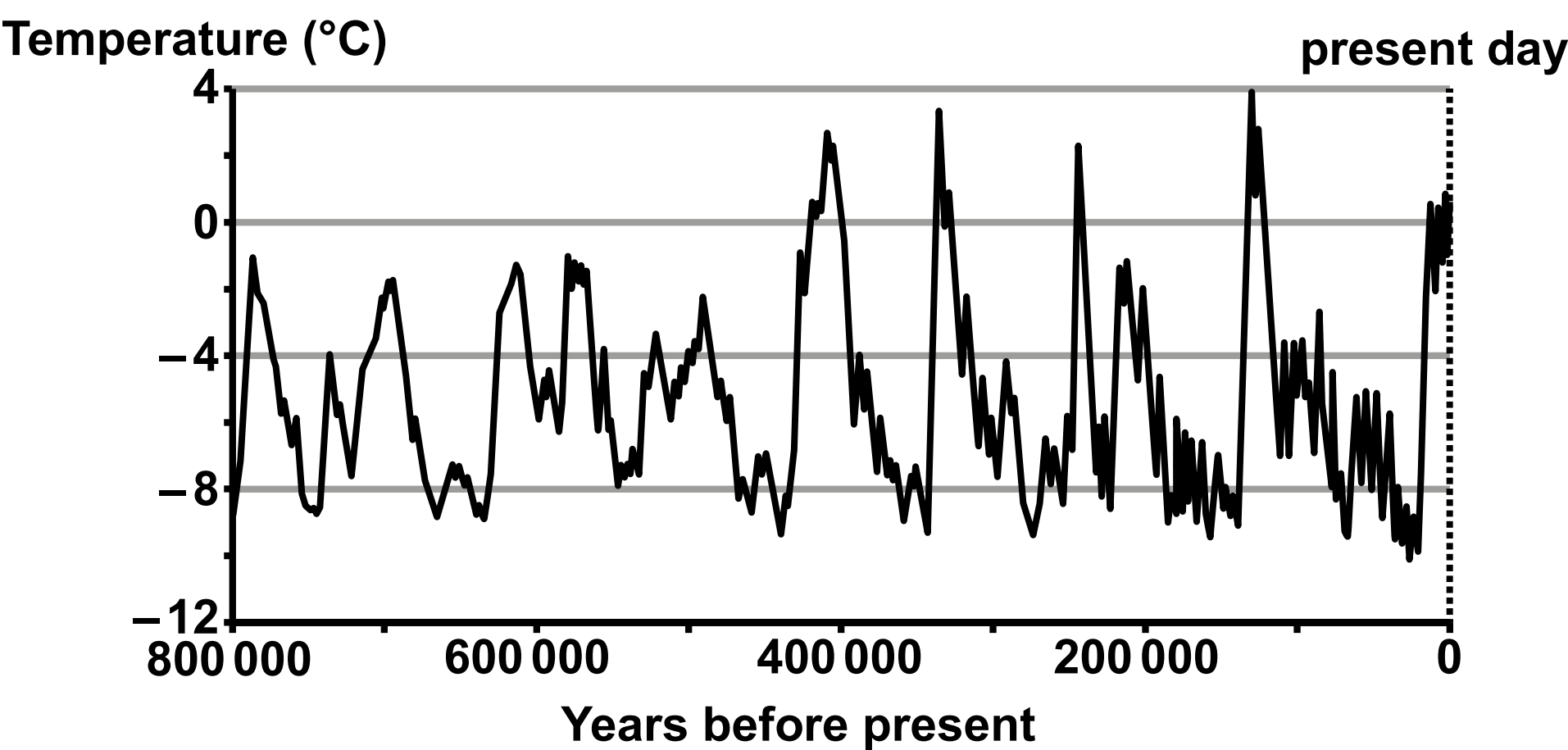
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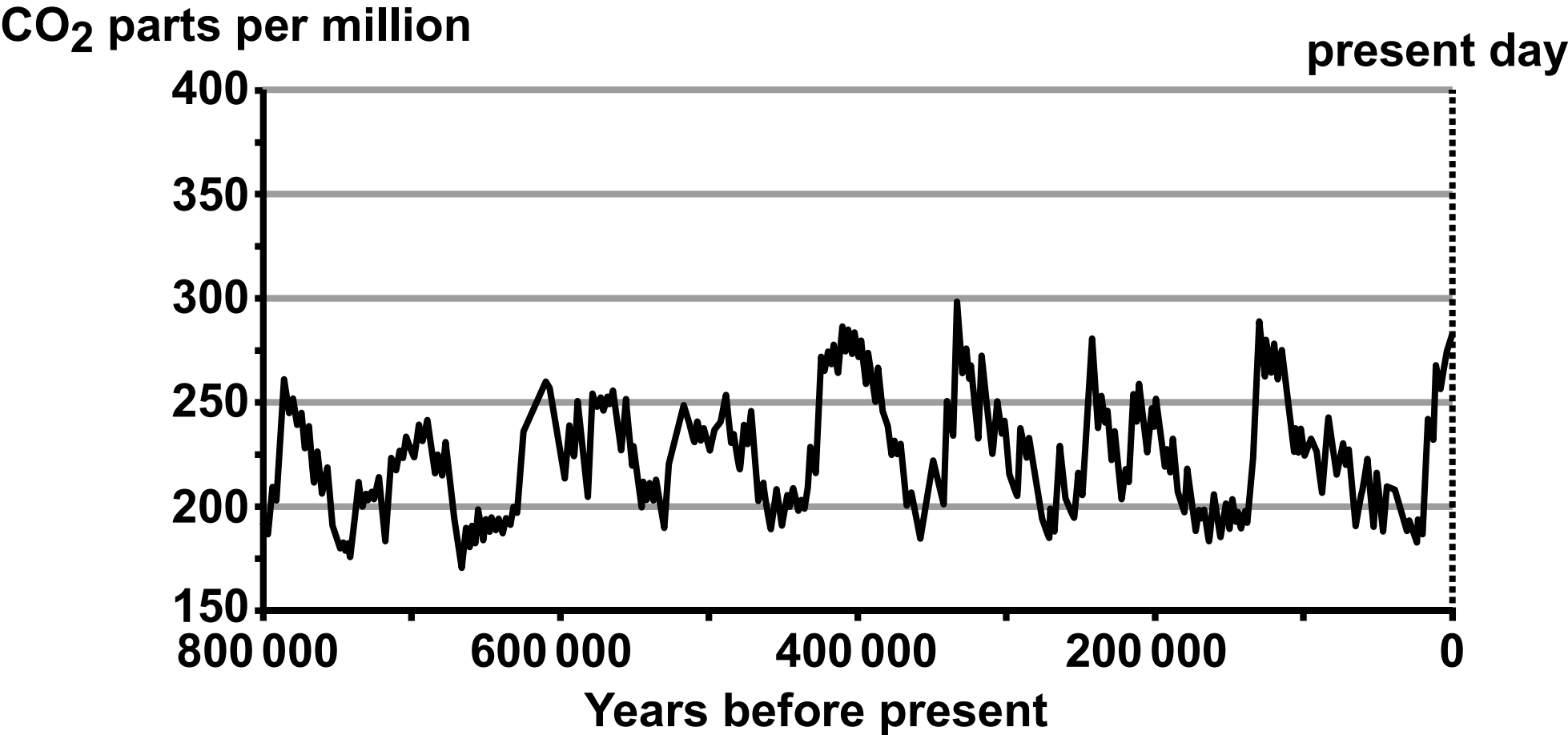
Question Number	Additional page, if required. Write the question number(s) in the left-hand margin.

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	34	
2	34	
SPaG	4	
either 3	16	
or 4	16	
Total	88	

GRAPH 1.1: TEMPERATURE IN ANTARCTICA



GRAPH 1.2: CO₂ LEVELS IN ICE CORES FROM ANTARCTICA

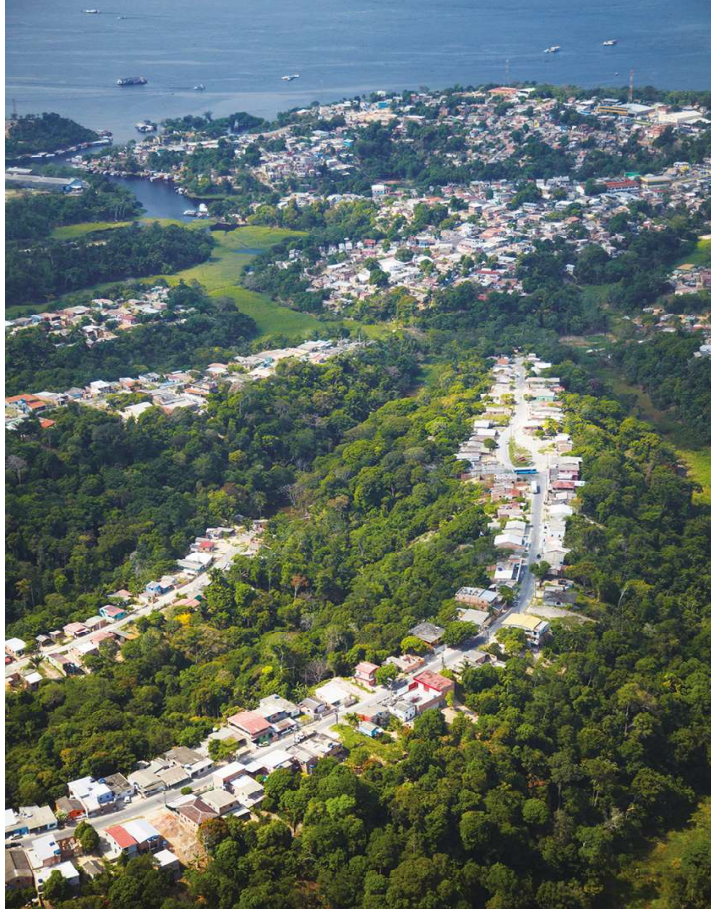


MAP 1.3: A MAP OF BRAZIL



RESOURCE BOX 1.5: HUMAN ACTIVITIES NEAR MANAUS

PLANNED HOUSING ALONG RIO NEGRO (RIVER NEGRO) IN MANAUS



INFORMAL SETTLEMENT IN MANAUS



- Informal settlements are expanding into the rainforest.
- In 2018 there was a new settlement every 11 days.
- One reason for the forest clearance is a lack of affordable housing elsewhere.
- Some residents claim that after the forest is cleared, it is hotter and there are more insects.

CRUISE SHIPS AND CONTAINERS AT THE PORT OF MANAUS

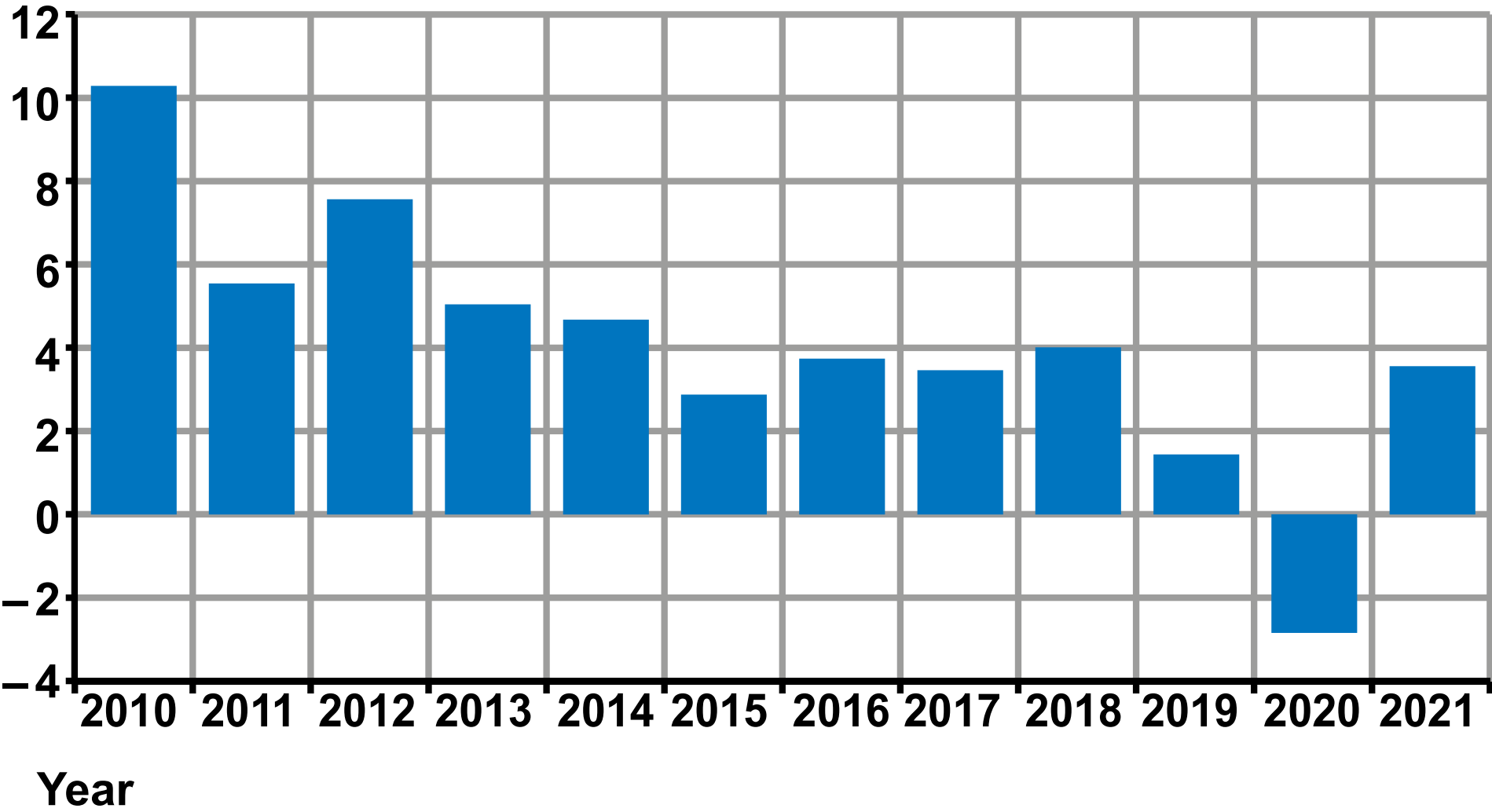


FARMING NEAR MANAUS

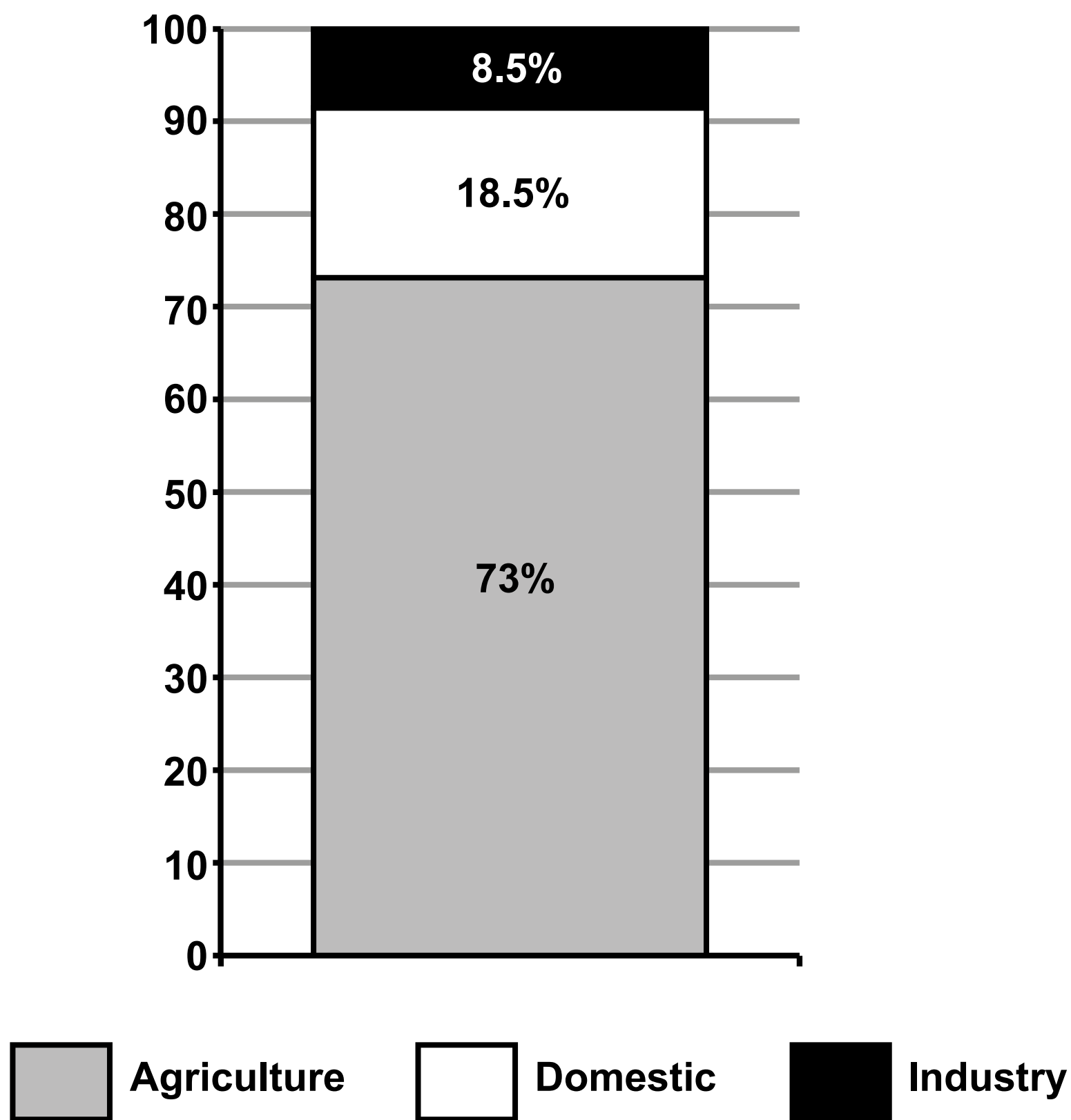


GRAPH 2.1: PERCENTAGE CHANGES IN GDP IN ZAMBIA FROM 2010 TO 2021

% change in GDP



GRAPH 2.2: FRESHWATER USE IN ZAMBIA



RESOURCE BOX 2.3

- **Zambia is a Low Income Country (LIC) in southern Africa.**
- **100 000 people rely on groundwater as their main source of water in the Chongwe area of Zambia.**
- **In this area, people struggle to access enough water due to population growth and climate change.**
- **In 2018 and 2019, rainfall was lower than usual and groundwater levels were very low.**

WATERING CROPS DURING THE 2018-2019 DROUGHT

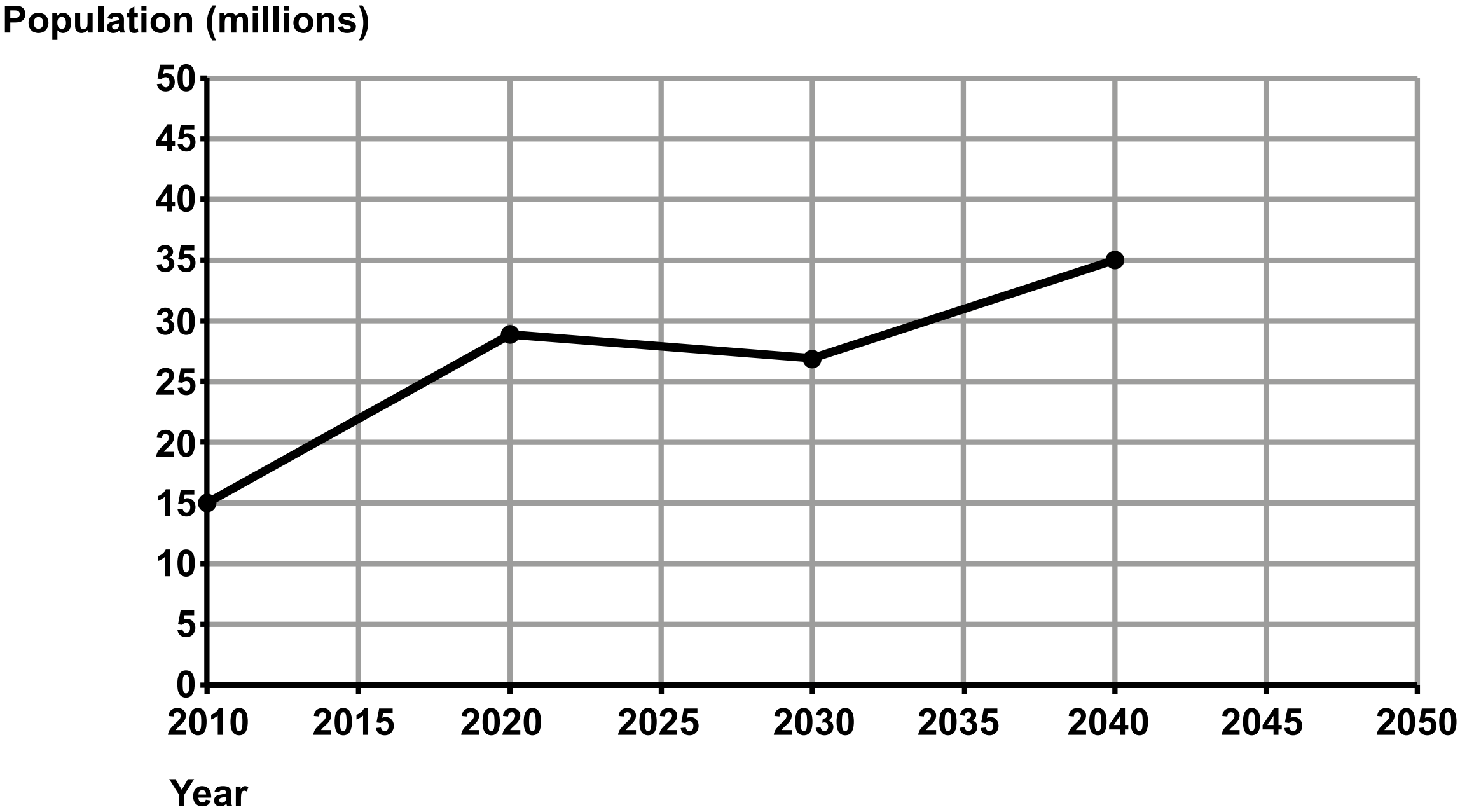


- **The Southern African Development Community (SADC) is an organisation helping communities such as this to manage water more sustainably.**
- **Water is being transferred to Chongwe from another area 27 km away.**
- **3 new wells were dug after the drought to provide water for drinking for 12 000 people in the Chongwe area.**
- **The wells have provided clean water and improved hygiene since the start of the COVID pandemic in 2020.**

COLLECTING WATER FROM A WELL IN ZAMBIA



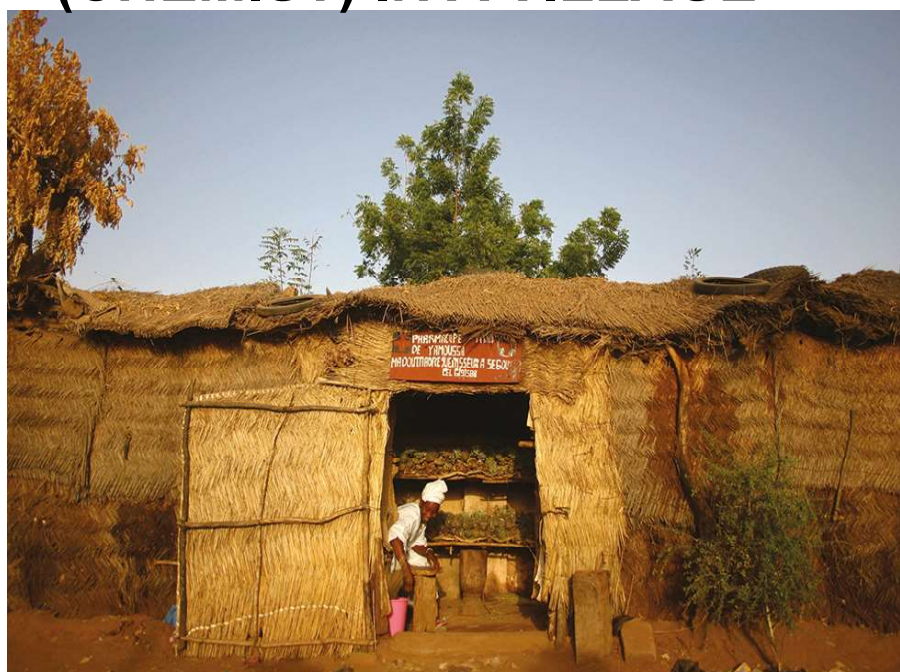
GRAPH 3.1: TOTAL POPULATION IN MALI BETWEEN 2010 AND 2050 (ESTIMATED)



RESOURCE BOX 3.2: SOME INFORMATION ABOUT HEALTH CARE ISSUES IN MALI, SUB-SAHARAN AFRICA

- The GNI per capita in Mali was US\$ 870 in 2021. In the UK it was US\$ 45 380.
- Mali experiences a significant amount of terrorism.
- Diseases such as malaria, pneumonia and diarrhoea are common and there are high infant and maternal mortality rates.
- The national healthcare system is not effective and there is a lack of education about women's health.
- 66% of women receive no education at all.

A TRADITIONAL PHARMACY (CHEMIST) IN A VILLAGE



A WOMEN'S CLINIC



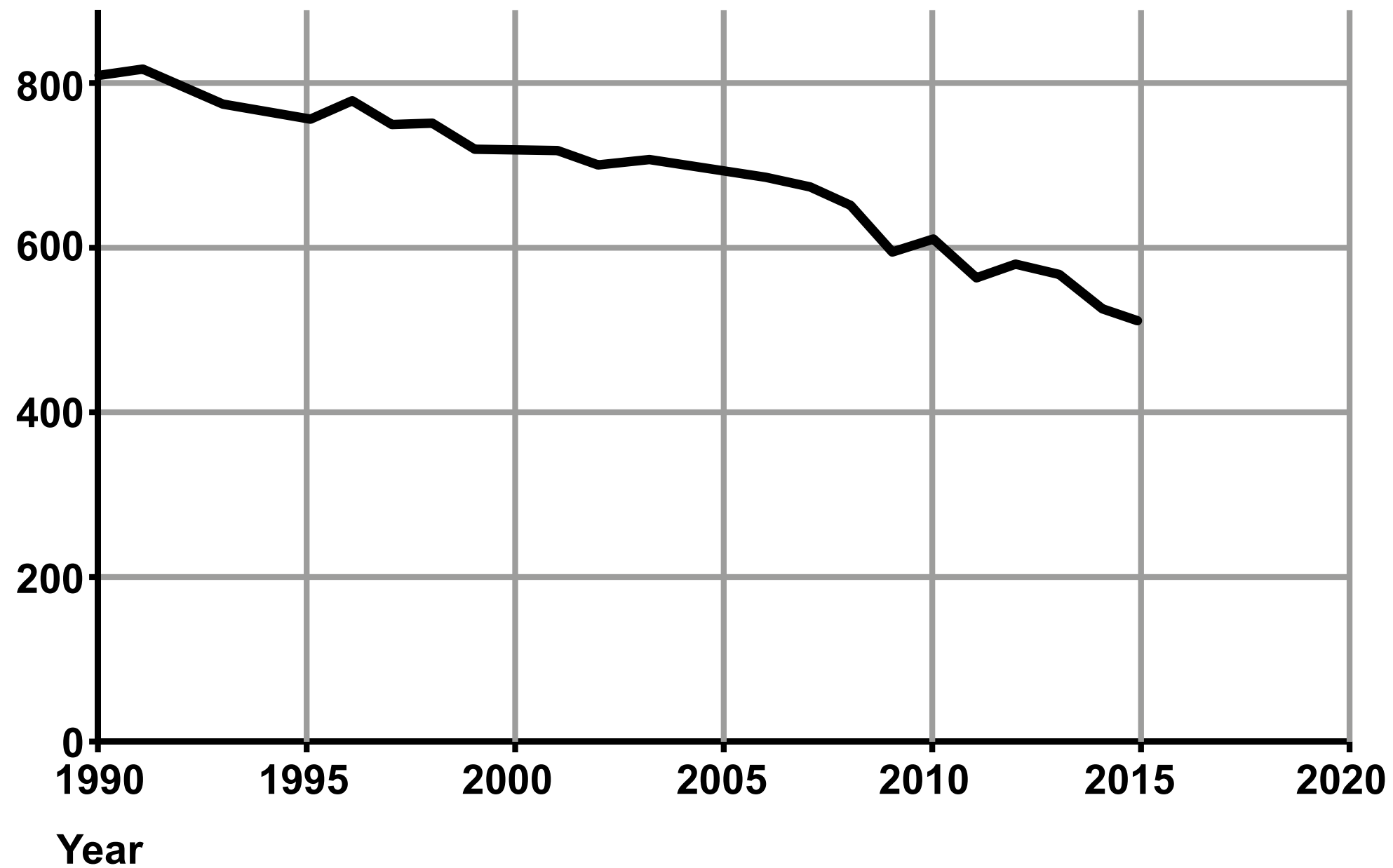
COMMUNITY-LED EDUCATION TO RAISE AWARENESS OF DISEASES



- Charities are supporting local communities to help reduce health care issues.
- Strategies include bed nets and medication to reduce malaria deaths.
- Mali Health is an organisation that supports local communities in improving child and maternal health. It also offers low-cost loans to help women improve the standard of living for their families.
- The organisation is led by women in the local communities.

GRAPH 4.1: CARBON DIOXIDE (CO₂) EMISSIONS IN THE UK

Million tonnes of CO₂



RESOURCE 4.2: INFORMATION ABOUT CLIMATE CHANGE

- The Earth's average temperature has increased by 1.1°C since the 19th century; most warming has happened since 1980.
- The ice sheets at the Poles are melting; global sea levels have increased by 20 cm in the last 100 years.
- Extreme weather events are increasing in frequency and intensity around the world, for example hurricanes, flooding and wildfires.

CLIMATE CHANGE PROTESTERS DURING COP 26



INTERNATIONAL AGREEMENTS SUCH AS COP 26



- COP 26 (A United Nations Conference on Climate Change) took place in November 2021.
- 200 countries signed an agreement to keep global warming below 1.5°C .
- 137 countries agreed to end deforestation by 2030.
- 103 countries agreed to reduce methane gas emissions by 30% by 2030.

THE GREAT GREEN WALL: 11 COUNTRIES HAVE PLANTED A WALL OF TREES TO ATTEMPT TO TACKLE EXPANSION OF THE DESERT

