

**Paper Reference 1GB0/03**  
**Pearson Edexcel**  
**Level 1/Level 2 GCSE (9–1)**

**Geography B**  
**PAPER 3: People and**  
**Environmental Issues**  
**Making Geographical Decisions**

**Time: 1 hour 30 minutes**

**Resource Booklet**

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

**V70856A**

# **Contents**

## **Page**

### **SECTION A**

**4            People and the Biosphere**

**5–6        Introduction**

**7–8        Figure 1**

**9            Figure 2**

### **SECTION B**

**10          Figure 3**

**11          Figure 4**

**(continued on the next page)**

**Turn over**

**Contents continued.**

**SECTION C**

**13–14    Figure 5**

**15–18    Figure 6**

**19–20    Figure 7**

**21–24    Figure 8**

**25        Figure 9**

**26–29    Figure 10**

# SECTION A

## People and the Biosphere

**The issue: development choices for Ghana.**

- **Ghana is a tropical West African country.**
- **Its main exports are oil, gold and cocoa (used to make chocolate).**
- **However, the country remains dependent on foreign aid.**
- **Ghana's government recently introduced a policy called 'Ghana beyond aid'. It wants Ghana's economy to grow more quickly – but how?**

# **Introduction**

- **Ghana is a relatively poor country where around a quarter of children still don't complete secondary school.**
- **Ghana's tropical climate is suitable for cocoa production and this has led to the removal of much of Ghana's tropical rainforest. Nearly half of Ghana's people work in agriculture.**
- **Around 1 million people work in small gold mines. This industry is another major cause of deforestation. Ghana lost a larger percentage of its remaining rainforest than any other country in 2018.**

**(continued on the next page)**

**Turn over**

## **Introduction continued.**

- **Ghana gained independence from the UK in 1957. Like then, much of today's profit from mining and agriculture still leaves Ghana. One view is that local people are exploited by transnational corporations (TNCs).**
- **Ghana's government has made developing new offshore oil resources its priority. The government says this will make people wealthier and less dependent on foreign aid.**
- **Two major development challenges lie ahead though. Firstly, population is predicted to nearly double between 2020 and 2050. Secondly, Ghana's physical environment is greatly threatened by climate change.**

## **Figure 1**

### **Population growth in Ghana, 1950–2020**

**In 2020, the fertility rate for Ghana was approximately 4 children per woman. The fertility rate is the average number of children a woman gives birth to in her lifetime.**

**(continued on the next page)**

**Turn over**

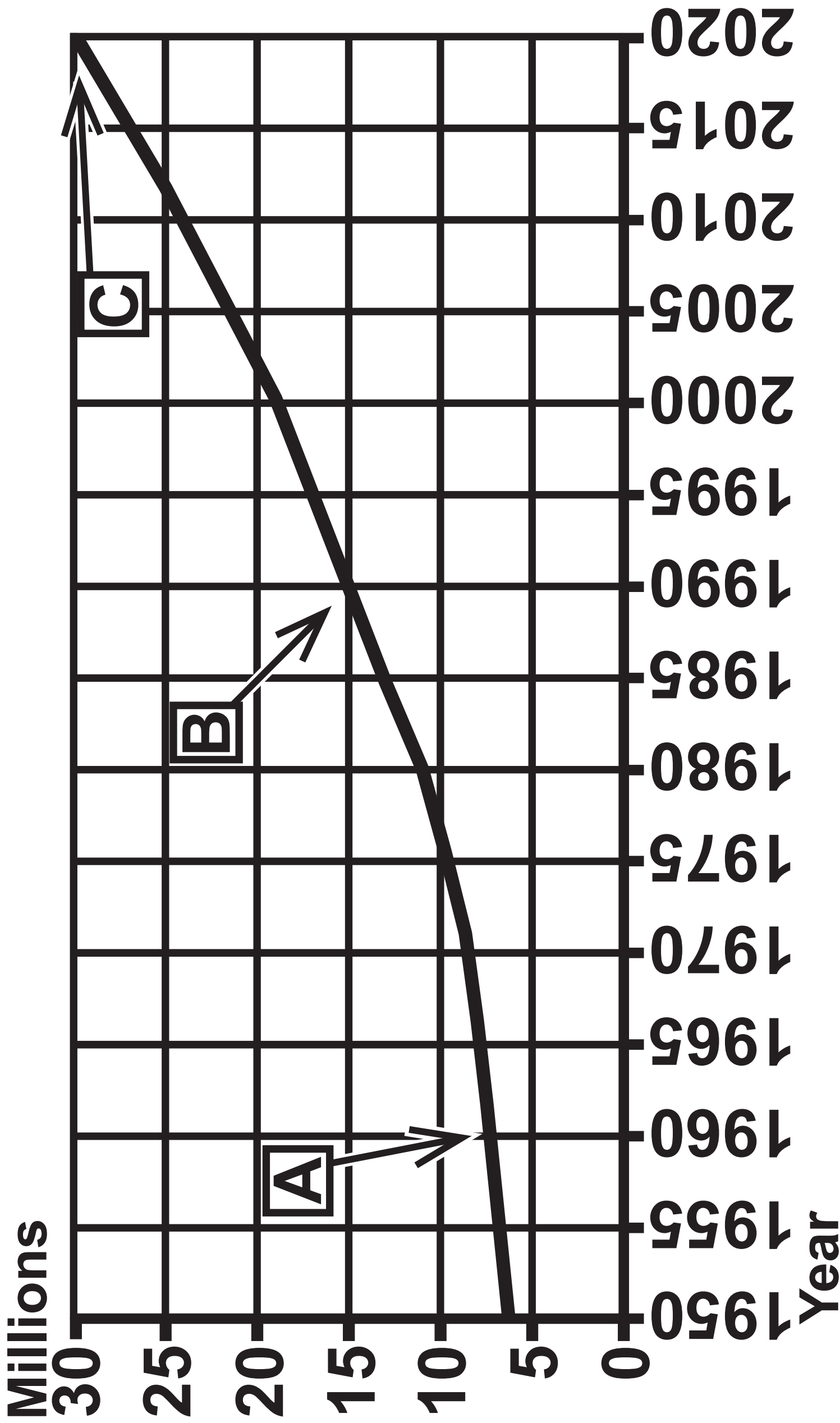
Figure 1 continued.

KEY — Population (millions)

A = 1960, 7.5 million people lived in Ghana.

B = In 1990, there were 15 million people.

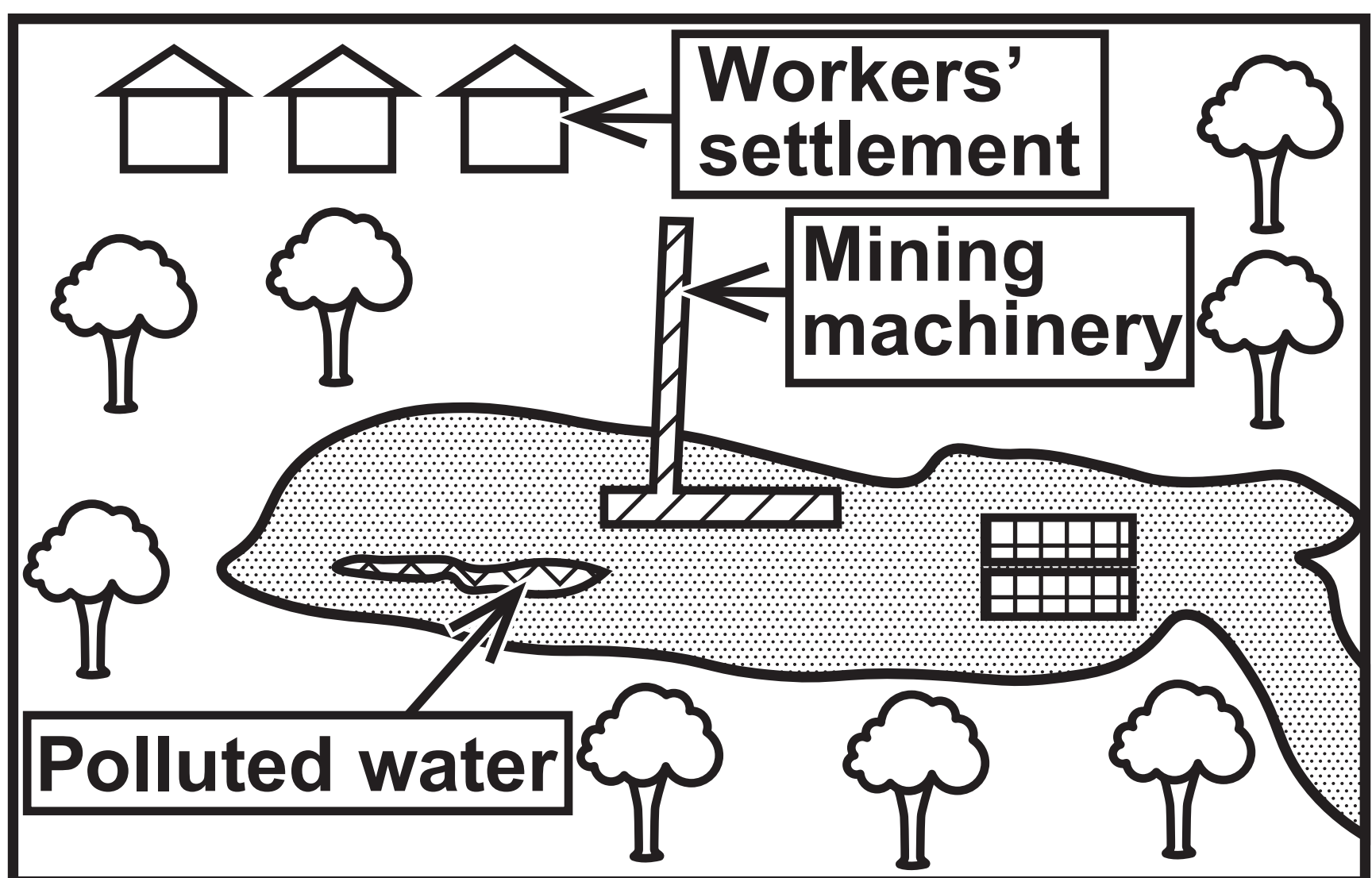
C = In 2020, there were 30 million people.





## Figure 2

### Gold mining in Ghana






**KEY**  Shipping Containers  Cleared area  Trees

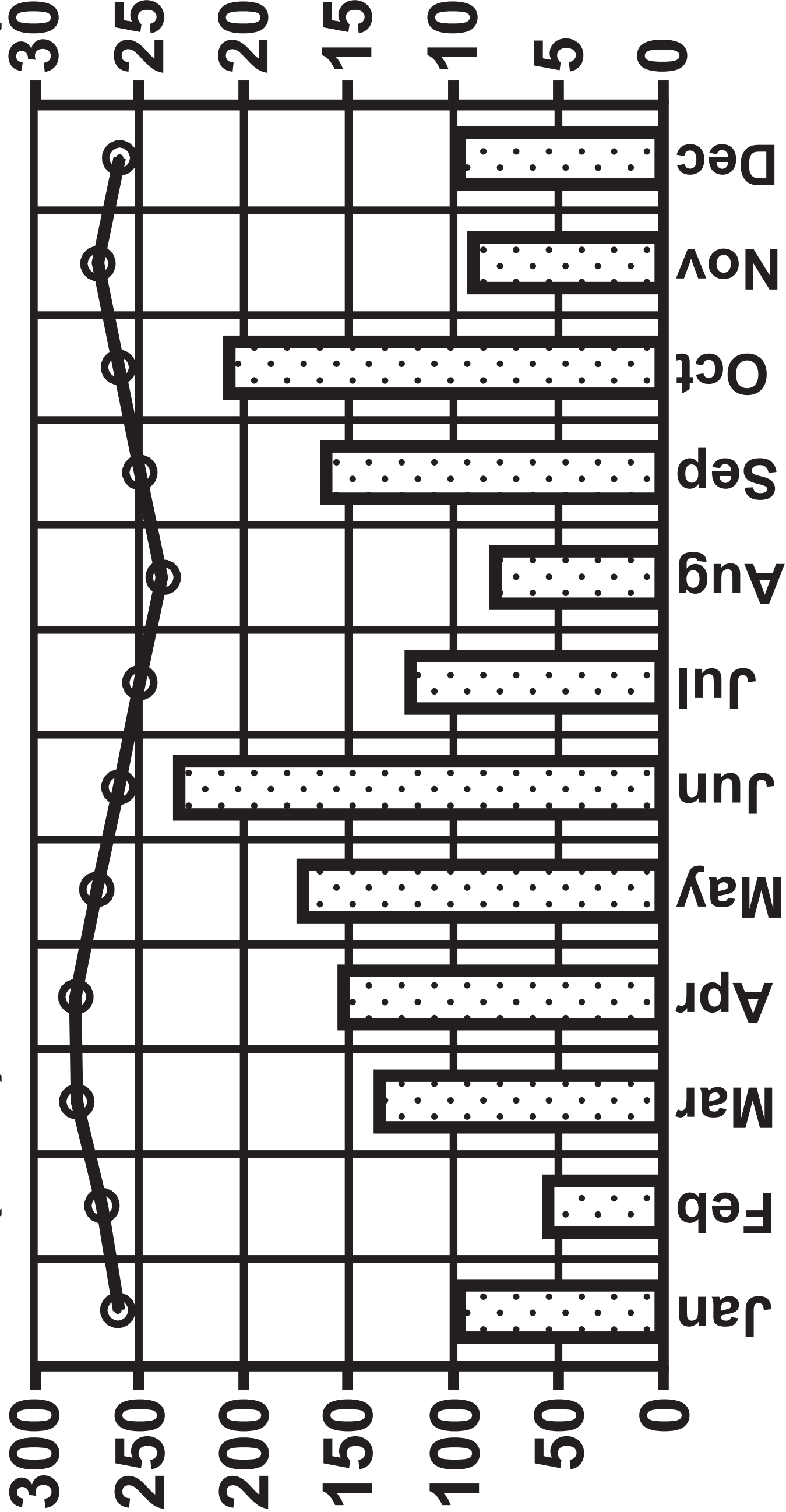
Figure 3

Climate graph for Ghana's tropical rainforest region

KEY [Bar with dots] Precipitation (mm) —●— Mean monthly temperature (°C)

Precipitation (mm)

Mean monthly temperature (°C)

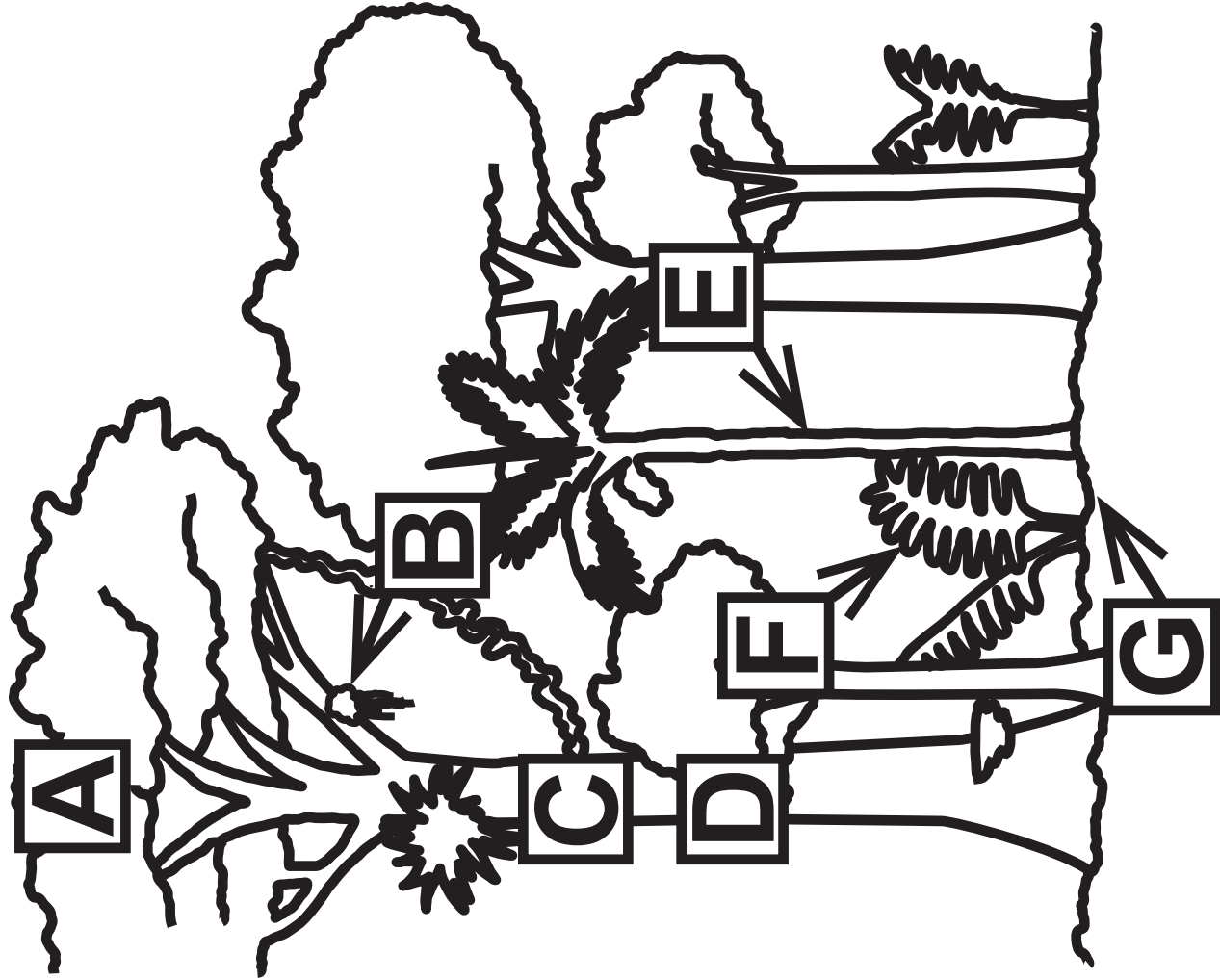




Changes in vegetation resulting from cocoa production

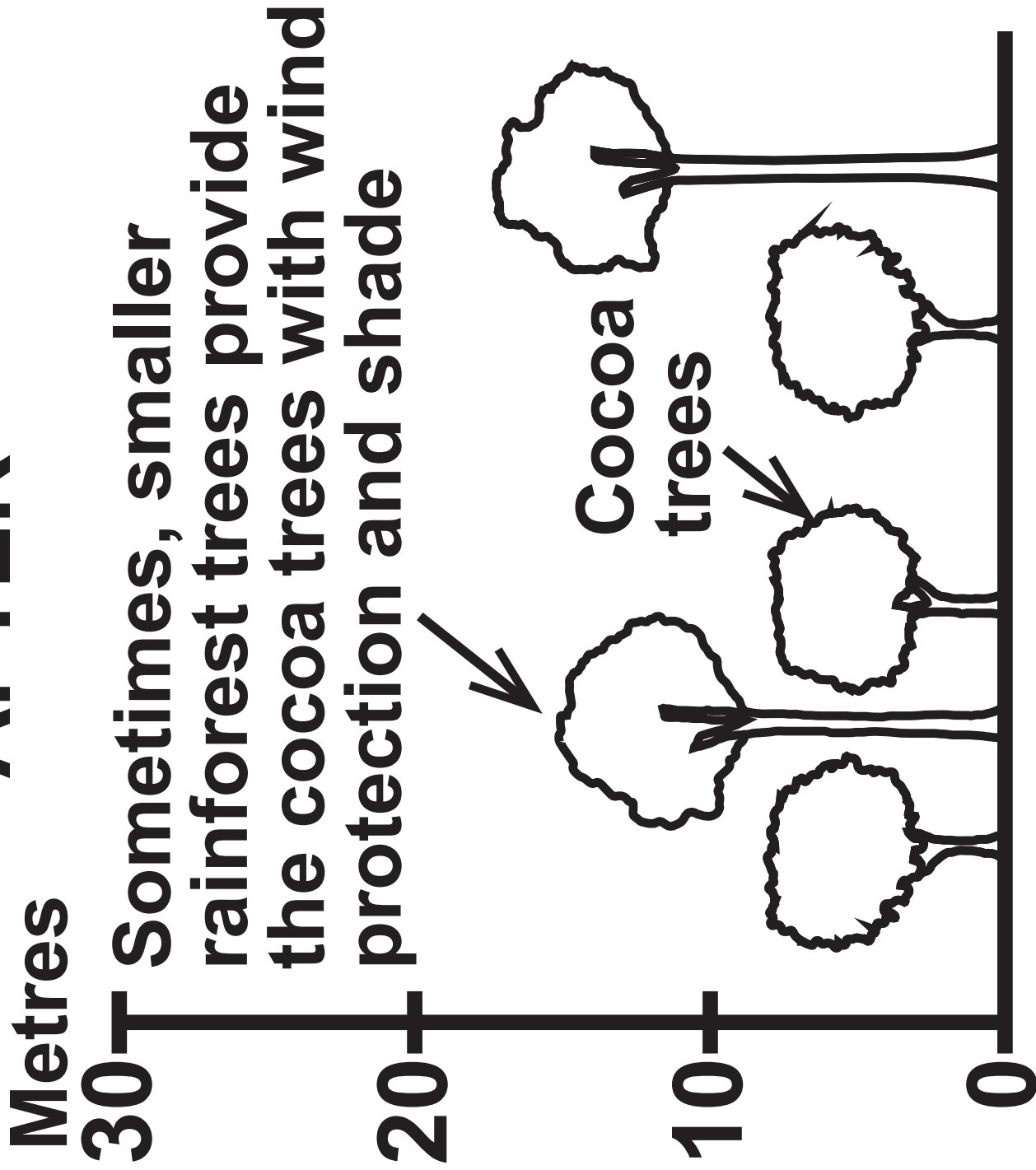
KEY A – Emergent layer B – Orchid C – Canopy layer  
D – Understorey layer E – Palm F – Fern G – Ground layer

BEFORE



The structure of the tropical rainforest

AFTER



The structure of the cocoa plantation

## SECTION C

# Consuming Energy Resources

## Figure 5

# A development and economic profile of Ghana

<b>Ghana – a development profile</b>		
<b>Development indicators</b>	<b>2010</b>	<b>2019</b>
<b>Gross Domestic Product (GDP) per capita in US\$</b>	<b>3,100</b>	<b>5,194</b>
<b>Human Development Index (HDI) ranking</b>	<b>152</b>	<b>140</b>
<b>% of 18 year olds attending university</b>	<b>7</b>	<b>17</b>
<b>Amount of international aid received in US\$</b>	<b>1,697 million</b>	<b>1,256 million</b>

(continued on the next page)

Turn over

Figure 5 continued.

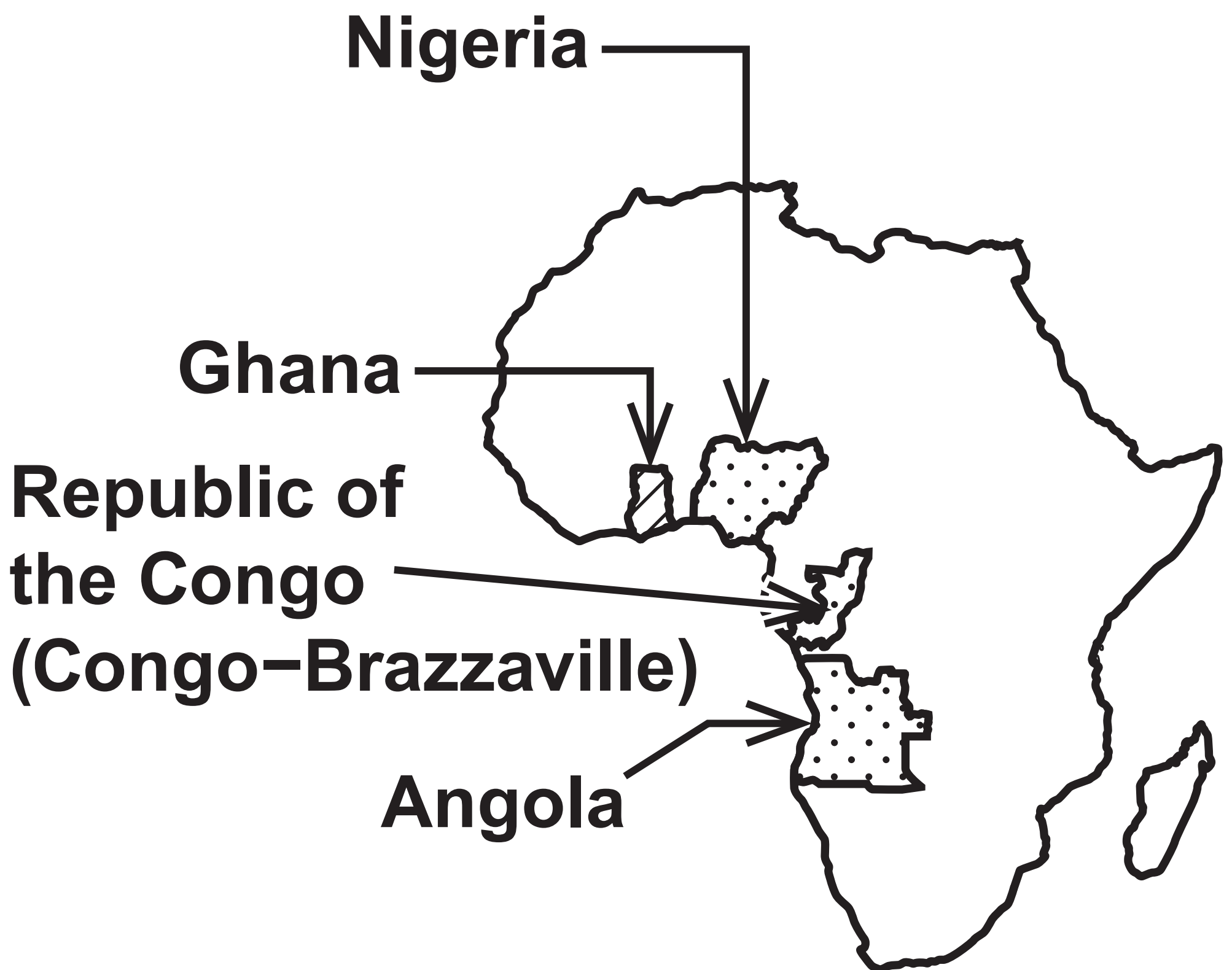
## The relative value of Ghana's different exports, 2019

- Each rectangle's size is proportional to the value of that economic sector.
- In 2020, the total economic value of Ghana's exports was **US\$ 21 billion**.



## Figure 6

### Africa's top three oil producers, 2020



(continued on the next page)

Turn over

Figure 6 continued.

Country	Nigeria
GDP contribution of oil	10%
Annual oil production	670 million barrels
Per capita GDP	US\$ 6,100
Living in extreme poverty	39% of population
Year oil production began	1958

(continued on the next page)

Turn over



Figure 6 continued.

<b>Country</b>	<b>Republic of the Congo (Congo–Brazzaville)</b>
<b>GDP contribution of oil</b>	<b>50%</b>
<b>Annual oil production</b>	<b>125 million barrels</b>
<b>Per capita GDP</b>	<b>US\$ 6,300</b>
<b>Living in extreme poverty</b>	<b>37% of population</b>
<b>Year oil production began</b>	<b>1957</b>

(continued on the next page)

Turn over

Figure 6 continued.

Country	Angola
GDP contribution of oil	25%
Annual oil production	600 million barrels
Per capita GDP	US\$ 6,800
Living in extreme poverty	52% of population
Year oil production began	1956

## Figure 7

### Ghana's Jubilee oil field

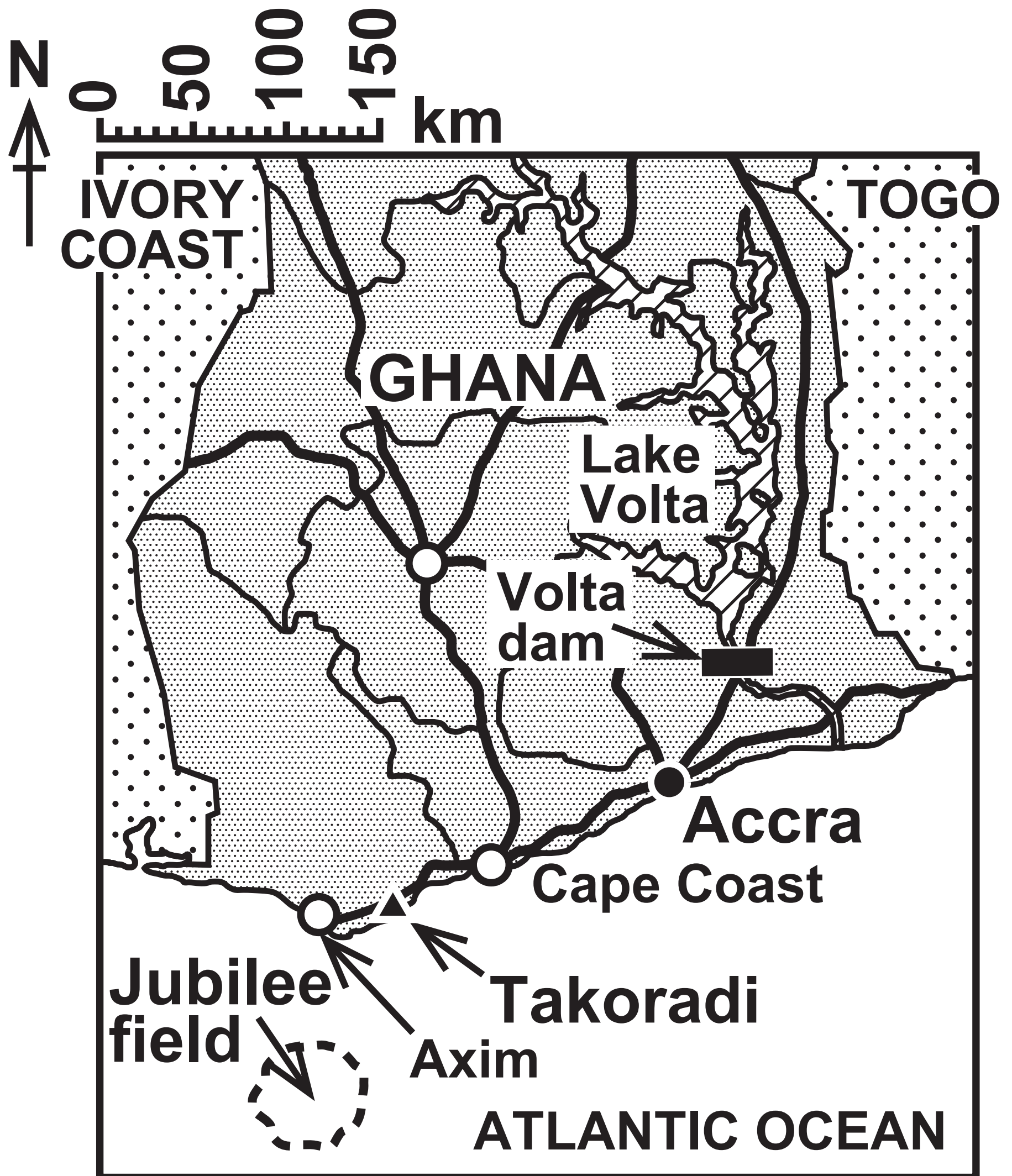
**In 2010, Ghana's government allowed a British TNC called Tullow to begin exploiting the newly-discovered Jubilee oil field.**

**(continued on the next page)**

**Turn over**

Figure 7 continued.

**KEY** ● Capital city ○ City - - - Oil fields  
▲ Oil storage area — Roads  
■ Dam and hydroelectric power (HEP) station



## Figure 8

# Two views on the exploitation of oil and other natural resources in Ghana

## View 1: A Ghanaian government minister

**“Ghana is lucky. We only found oil recently, so we can learn from the mistakes of other countries where oil wealth has been a source of corruption and war. When I was young, we depended on cocoa exports. Today, everyone is talking about oil and freeing ourselves from foreign aid.**

**(continued on the next page)**

**Turn over**

**Figure 8 continued.**

**We still rely on foreign TNCs to provide the skilled workers and technology needed to develop our offshore oil. But this will change as our universities begin to offer management and engineering courses.**

**One day soon, Ghana will be a top African oil exporter with production of about 100 million barrels per year. We are excited about new offshore survey data produced by Kosmos (a US TNC). It shows we will become a very rich and successful country.”**

**(continued on the next page)**

**Turn over**

Figure 8 continued.

## **View 2: A Ghanaian university professor**

**“The vast majority of the profits from our natural resources do not remain here. Only 2% of gold profits make their way back. Oil is not much better. TNCs, aided by a few rich and powerful Ghanaians, keep most of the profits. Everyone else is left dependent on aid.**

**TNCs take 100 billion US\$ each year from developing countries. Of the top 10 foreign TNCs operating in Africa, nine are based in developed countries. This is just a new version of colonialism.**

**(continued on the next page)**

**Turn over**

**Figure 8 continued.**

**In other words, wealth from our gold, cocoa and oil is used to promote economic growth elsewhere – while we stay too poor to pay for the infrastructure, education and skills needed to process and distribute our resources ourselves.”**



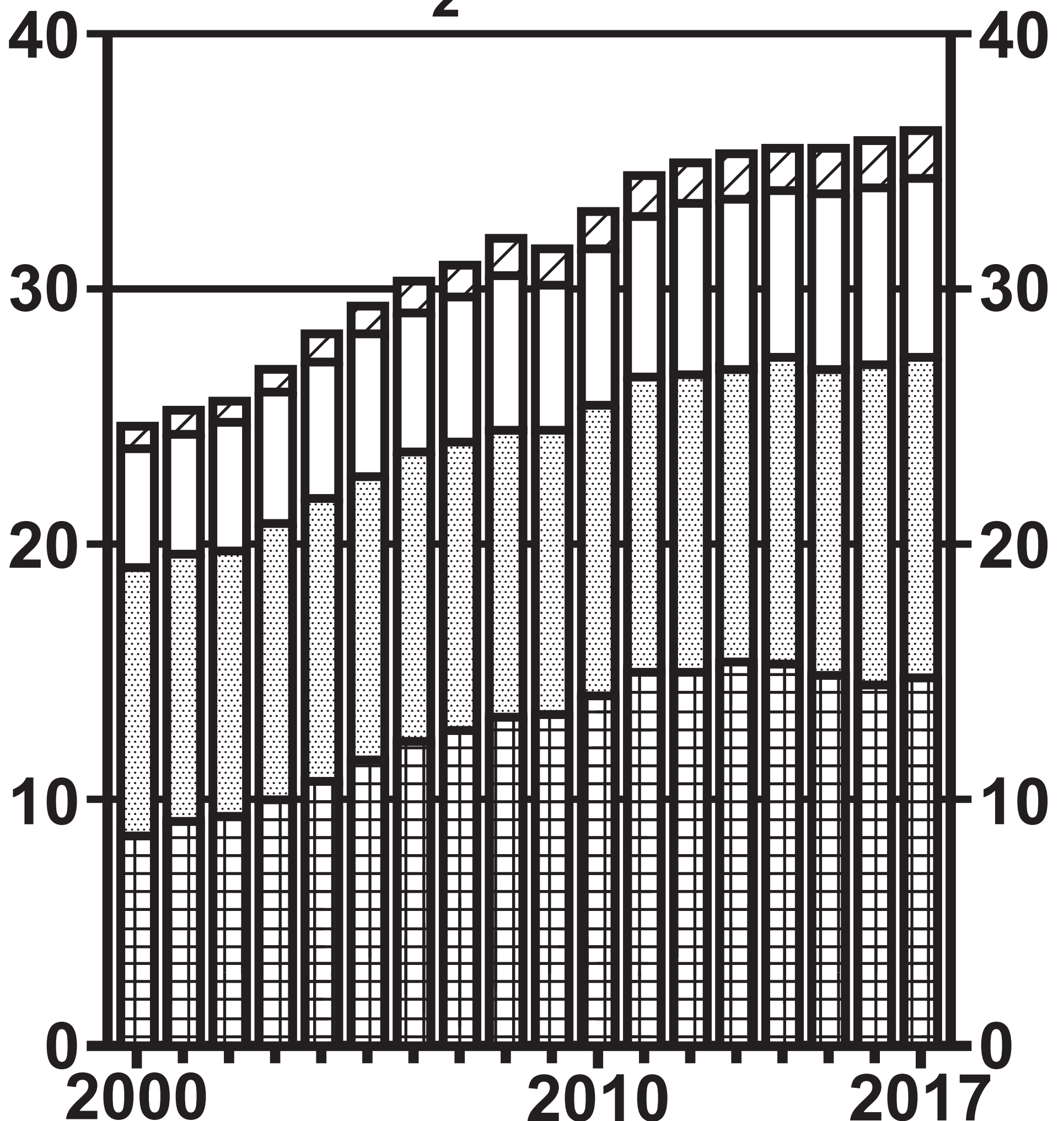
Figure 9

# Global CO<sub>2</sub> emissions from fossil fuel use, 2000–2017

## KEY

Other fossil fuels Gas Oil Coal

Billion tonnes CO<sub>2</sub>



## Figure 10

### Results of research by Ghana's climate change scientists

#### Climate change projections for Ghana

- **1·4–5·8°C increase in temperature by 2080**
- **4 per cent (%) decrease in rainfall by 2040**
- **75–190 mm rise in sea levels by 2100**

**(continued on the next page)**

**Turn over**

**Figure 10 continued.**

## **Key future environmental issues for Ghana**

### **Threatened ecosystems**

- **Forests replaced by grasslands with fewer animal habitats.**
- **Climate may become too dry for some existing crops.**

### **Freshwater shortages**

- **Reduced water availability.**
- **Reduced water for HEP (hydroelectric power).**

**(continued on the next page)**

**Turn over**

**Figure 10 continued.**

## **Flooded coastline**

- **Many of Ghana's urban areas will be flooded, where 2 million people live.**
- **Loss of farmlands near Lake Volta.**

## **Warmer coastal waters**

- **Loss of species who prefer a colder habitat, so food webs may collapse.**
- **Loss of earnings for 2 million people who earn a living from fishing.**

**(continued on the next page)**

**Turn over**

**Figure 10 continued.**

**The longer ‘business as usual’ fossil fuel use continues, the worse these impacts will be.**

## **Acknowledgements**

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

**Figure 1 sourced from [https://  
worldpopulationreview.com/countries/  
ghana-population](https://worldpopulationreview.com/countries/ghana-population)**

**Figure 2 ©Greenshoots Communications/  
Alamy Stock Photo**

**Figure 5 sourced from [https://oec.world/  
en/profile/country/gha/#Exports%20%  
20%20, \[https://wenr.wes.org/2019/04/  
education-in-ghana\]\(https://wenr.wes.org/2019/04/education-in-ghana\)](https://oec.world/en/profile/country/gha/#Exports%20%20%20)**

**(continued on the next page)**

**Turn over**

**Acknowledgements continued.**

**Fig 6 sourced from <https://www2.deloitte.com/us/en/insights/industry/oil-and-gas/africa-oil-gas-industry-energy-reserves.html>**

**Fig 7 sourced from <https://www.ft.com/content/b6c4d2c6-c1ad-11e8-84cd-9e601db069b8>**

**Fig 8 view 1 adapted from <https://www.ft.com/content/c10e6314-c1ad-11e8-84cd-9e601db069b8>**

**Fig 8 view 2 adapted from [https://www.salon.com/2019/05/25/98-3-percent-of-ghanas-gold-remains-in-the-hands-of-multinational-corporations\\_partner/](https://www.salon.com/2019/05/25/98-3-percent-of-ghanas-gold-remains-in-the-hands-of-multinational-corporations_partner/)**

**(continued on the next page)**

**Turn over**

**Acknowledgements continued.**

**Fig 10 adapted from [https://www.climatelinks.org/sites/default/files/asset/document/2017\\_USAID\\_Climate%20Change%20Risk%20Profile%20-%20Ghana.pdf](https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_Climate%20Change%20Risk%20Profile%20-%20Ghana.pdf)**