

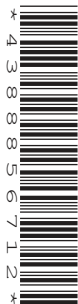
CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



DEVELOPMENT STUDIES

0453/02

Paper 2

October/November 2019

2 hours

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your centre number, candidate number and name in the spaces provided.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer **all** the questions.

You may not need all the answer lines for your answer.

You should read and study the sources **before** answering the questions.

The Insert contains Fig. 3.5, Fig. 3.6 and Fig. 3.7 for Question 3.

The Insert is **not** required by the examiner.

At the end of the examination, fasten all your work securely together.

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

This document consists of **20** printed pages and **1** Insert.

1 (a) Study Table 1.1, which shows indicators of development for a sample of ten countries.

Table 1.1

	GDP per person (US\$)	Number of doctors (per 10 000 people)	Female literacy rate (percentage)	Employment in agriculture (percentage)
Australia	48 000	32.7	99.9	3.6
Bangladesh	3 900	3.6	58.5	15.1
Dominican Republic	11 400	14.9	92.3	5.1
Finland	41 800	29.1	99.9	2.5
Guatemala	7 900	9.3	74.4	13.2
Libya	14 200	19.0	85.6	1.9
New Zealand	37 100	27.4	99.9	4.2
Panama	22 800	16.5	94.4	2.7
Slovakia	31 200	33.2	99.6	3.6
Thailand	16 800	3.9	96.7	8.9

(i) Identify from Table 1.1 the country where:

A the smallest percentage work in farming;

B there is the lowest access to medical care. [2]

(ii) What is meant by *Panama has a female literacy rate of 94.4%*?

.....

 [2]

(iii) Put the following developing countries in rank order according to their number of doctors, female literacy rate and employment in agriculture.

Bangladesh Guatemala Dominican Republic Thailand

<p style="text-align: center;">Number of doctors (per 10 000 people)</p> <p>1st Highest</p> <p>2nd</p> <p>3rd</p> <p>4th Lowest</p> <div style="text-align: center;"> </div>	<p style="text-align: center;">Female literacy rate (percentage)</p> <p>1st Highest</p> <p>2nd</p> <p>3rd</p> <p>4th Lowest</p> <div style="text-align: center;"> </div>
<p style="text-align: center;">Employment in agriculture (percentage)</p> <p>1st Highest</p> <p>2nd</p> <p>3rd</p> <p>4th Lowest</p> <div style="text-align: center;"> </div>	

[3]

(iv) Which of the indicators of development used in Table 1.1 do you consider is most useful to measure each of economic and social development?

Give a reason for each of your choices.

Economic development

Indicator

Reason

.....

.....

Social development

Indicator

Reason

.....

.....

[4]

(b) The Human Development Index (HDI) is an indicator of development, based on life expectancy, education, and income per person.

(i) Finland has an HDI of 0.883 and the Dominican Republic has an HDI of 0.724.

Suggest likely differences in life expectancy, education, and income per person between Finland and the Dominican Republic.

life expectancy

.....
.....

education

.....
.....

income per person

.....
.....

[3]

(ii) Explain why using HDI is more effective than using GDP when comparing the development of two countries.

.....
.....
.....
.....
.....

[3]

(c) Study Fig. 1.1, a scatter graph showing GDP per person and electricity use per person of a sample of countries.

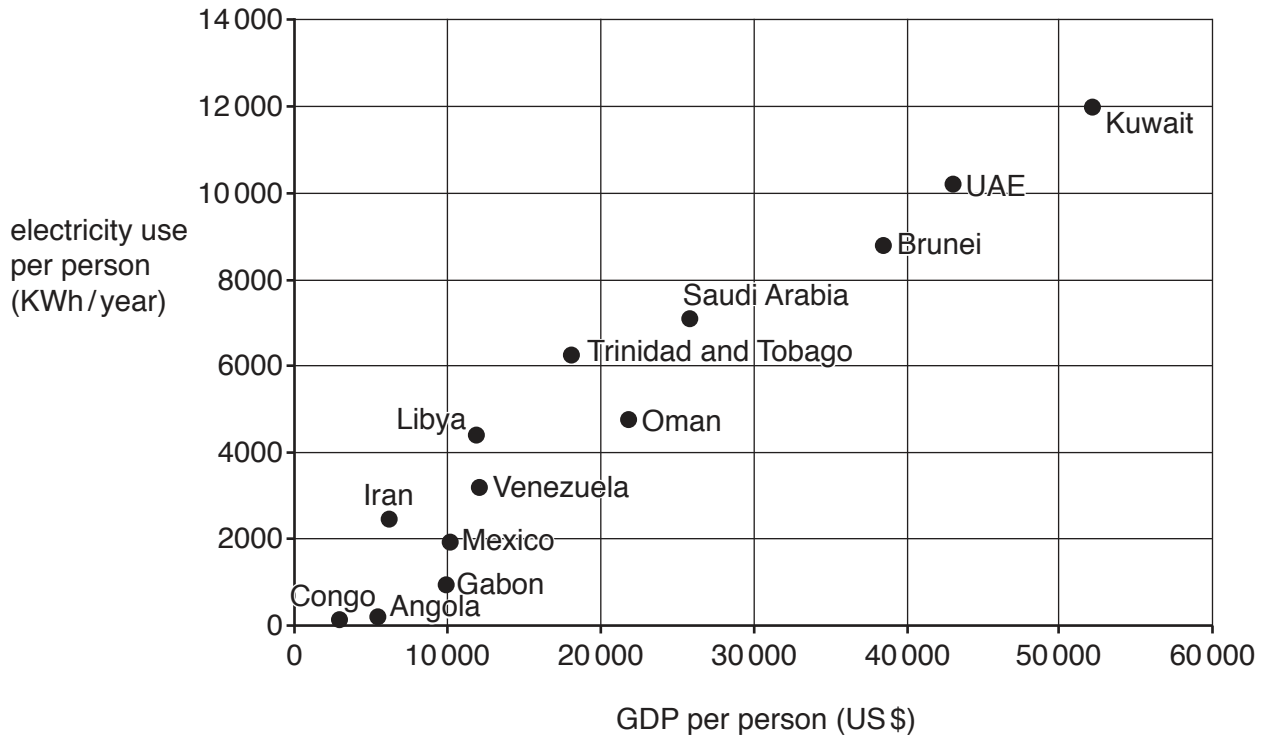


Fig. 1.1

(i) Plot the following information for Russia on Fig. 1.1:

GDP per person = 15 000 (US\$)

Electricity use per person = 6000 (KWh/year) [1]

(ii) Describe the relationship shown on Fig. 1.1 between GDP per person and electricity use per person. You should include data in your answer.

.....

.....

.....

.....

.....

..... [3]

(iii) Explain why there is a relationship between GDP per person and electricity use per person.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 25]

- 2 (a) Study Fig. 2.1, information about a research investigation carried out to compare fuels used for cooking and lighting in two villages in the eastern part of Nepal.

The villages of Barbote and Kanyam were compared:
Barbote has a population of 6424 and there are 1414 households.
Kanyam has a population of 7290 and there are 1715 households.

Qualitative and quantitative data were collected in February 2013 for 15 days.
100 residents were selected, 50 from Barbote and 50 from Kanyam.
The main part of the study was conducted through structured questionnaires and semi-structured interviews. In addition, one local leader from each village was interviewed.
Observation was also undertaken on different fuel types used for lighting and for use in cooking stoves.
To choose the 100 residents, convenience sampling was used based on the availability of the people. As it was harvesting and firewood collecting season in Barbote most of the people were in the fields, so it was hard to meet them at their homes. In Kanyam the data was collected in the early morning and evening at people's homes.
In addition data was collected using books, e-books, journals and online publications.

Fig. 2.1

- (i) What was the aim of the research investigation?

.....
..... [1]

- (ii) What is meant by:

- qualitative data;

.....
.....

- quantitative data?

.....
..... [2]

- (iii) Identify **two** primary and **two** secondary methods of data collection used in the research investigation.

Primary methods

1

2

Secondary methods

1

2

[4]

- (iv) 'To choose the 100 residents, convenience sampling was used based on the availability of the people.'

Give **one** advantage and **one** disadvantage of this sampling method.

Advantage

.....

.....

Disadvantage

.....

.....

[2]

(v) Explain why care must be taken when using the results from:

personal observations;

.....
.....
.....
.....

interviews with the village leaders;

.....
.....
.....
.....

secondary data.

.....
.....
.....
.....

[6]

(b) Study Fig. 2.2, showing results from the questionnaire about the educational level of the 100 residents in Barbote and Kanyam.

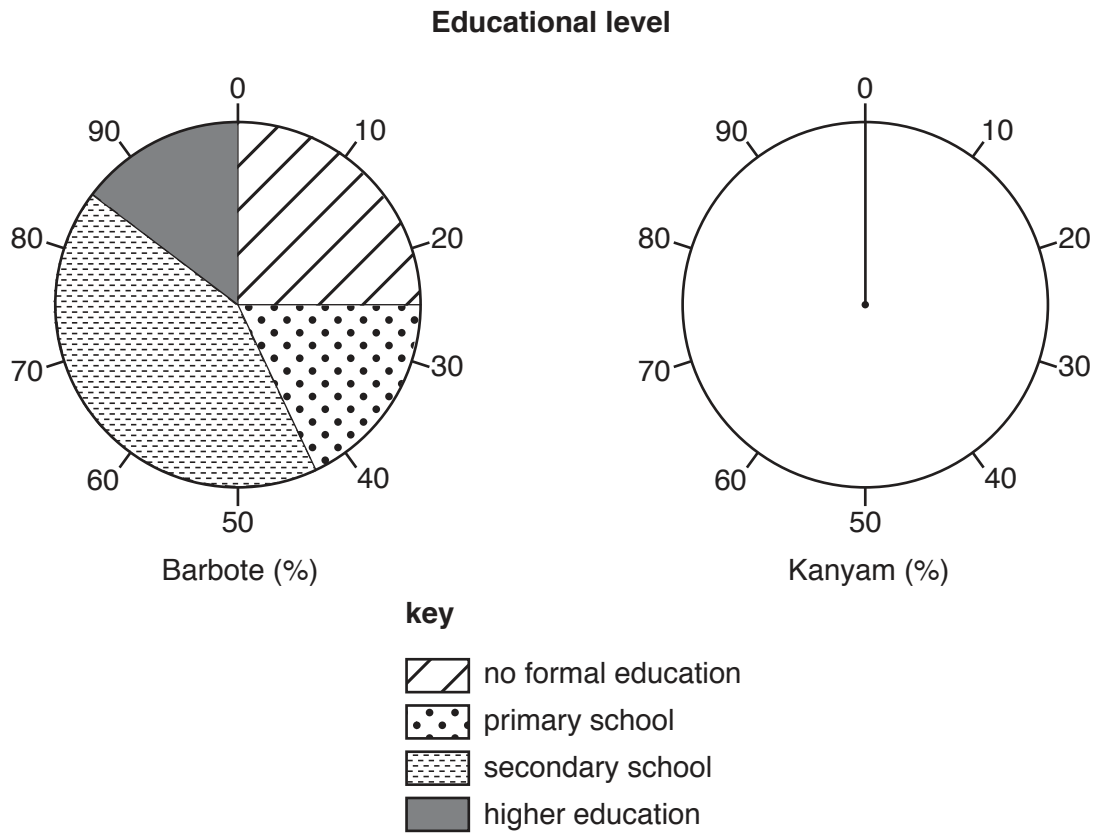


Fig. 2.2

(i) Complete the pie chart for Kanyam in Fig. 2.2, by showing the following information about the educational level of the 50 residents sampled in Kanyam:

Educational level	Percentage
No formal education	30
Primary school	40
Secondary school	22
Higher education	8

[3]

Question 2 continues on the next page.

(ii) Study Figs. 2.3 and 2.4, which show the different fuel types used for lighting and cooking by the 100 residents in Barbote and Kanyam.

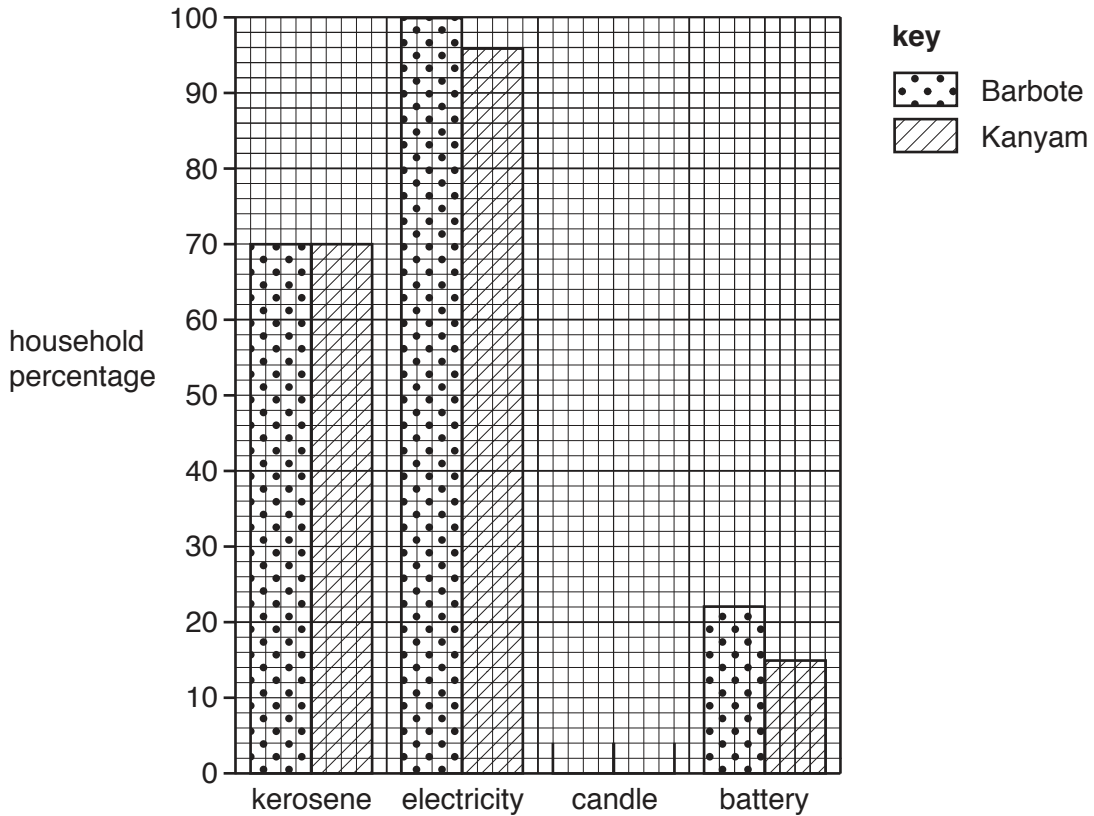


Fig. 2.3: fuel type for lighting

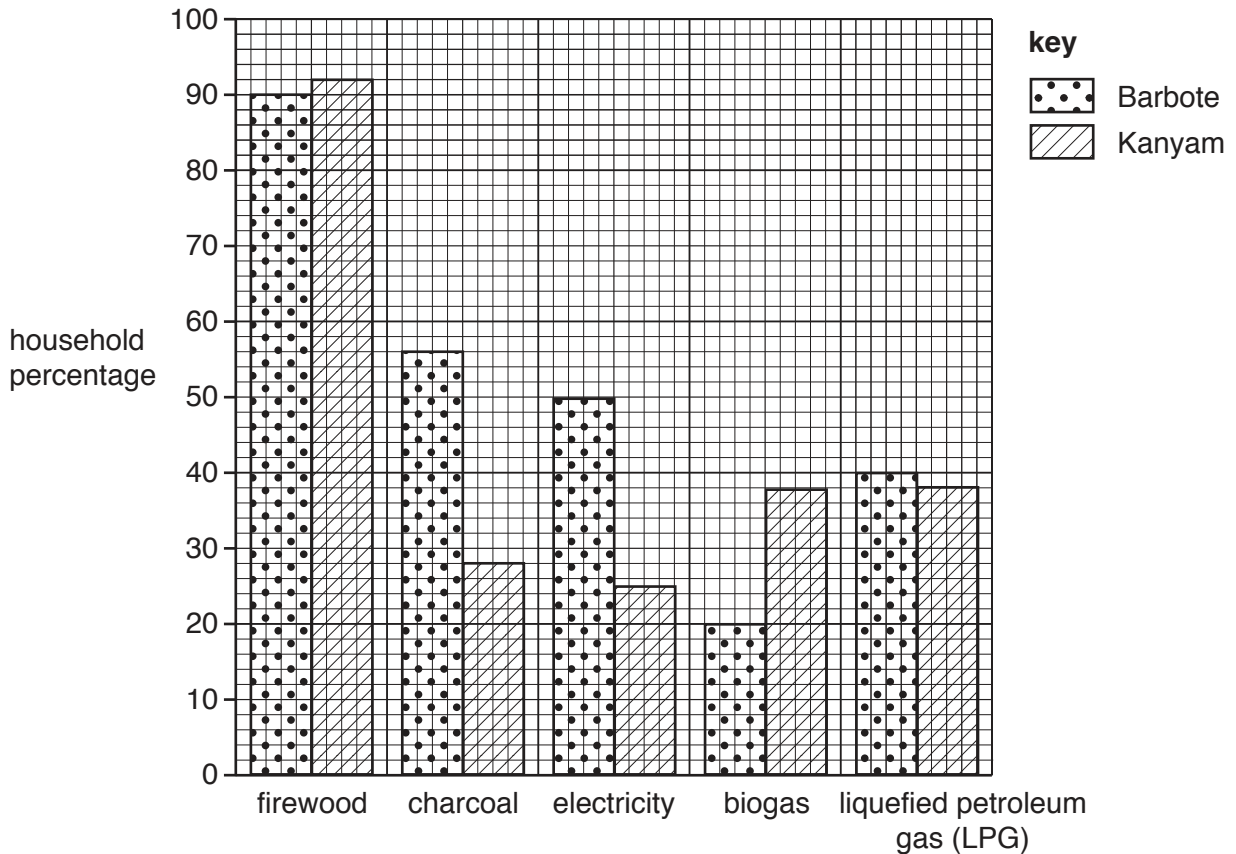


Fig. 2.4: fuel type for cooking

Complete the bar graph in Fig. 2.3, showing fuel type for lighting for both villages, using the following information.

- 90% of the people interviewed in Barbote used candles for lighting
- 55% of the people interviewed in Kanyam used candles for lighting [2]

(iii) Compare the fuel types used for cooking in Barbote and Kanyam. Use data from Fig. 2.4 in your answer.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 24]

3 (a) Study Fig. 3.1, which shows some global environmental problems.

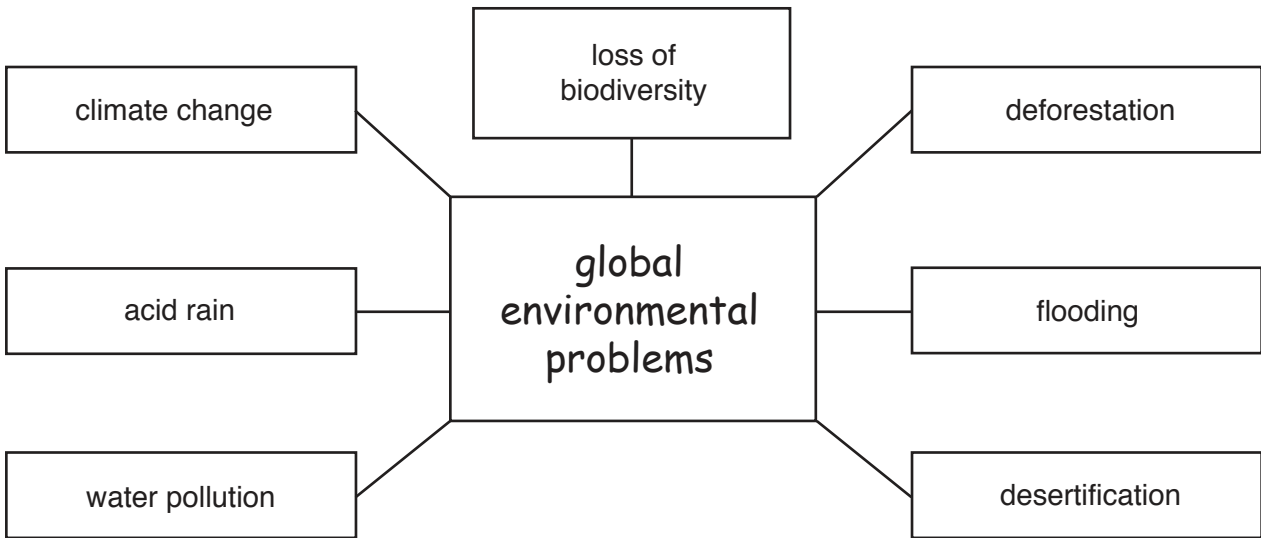


Fig. 3.1

(i) What is meant by

- a **global** environmental problem;

.....
.....

- loss of biodiversity?

.....
.....

[2]

(ii) Identify the global environmental problem from Fig. 3.1 which is mainly caused by emissions of sulfur dioxide and nitrogen oxide.

..... [1]

(b) Study Fig. 3.2, a graph showing changes in average global temperature between 1880 and 2010.

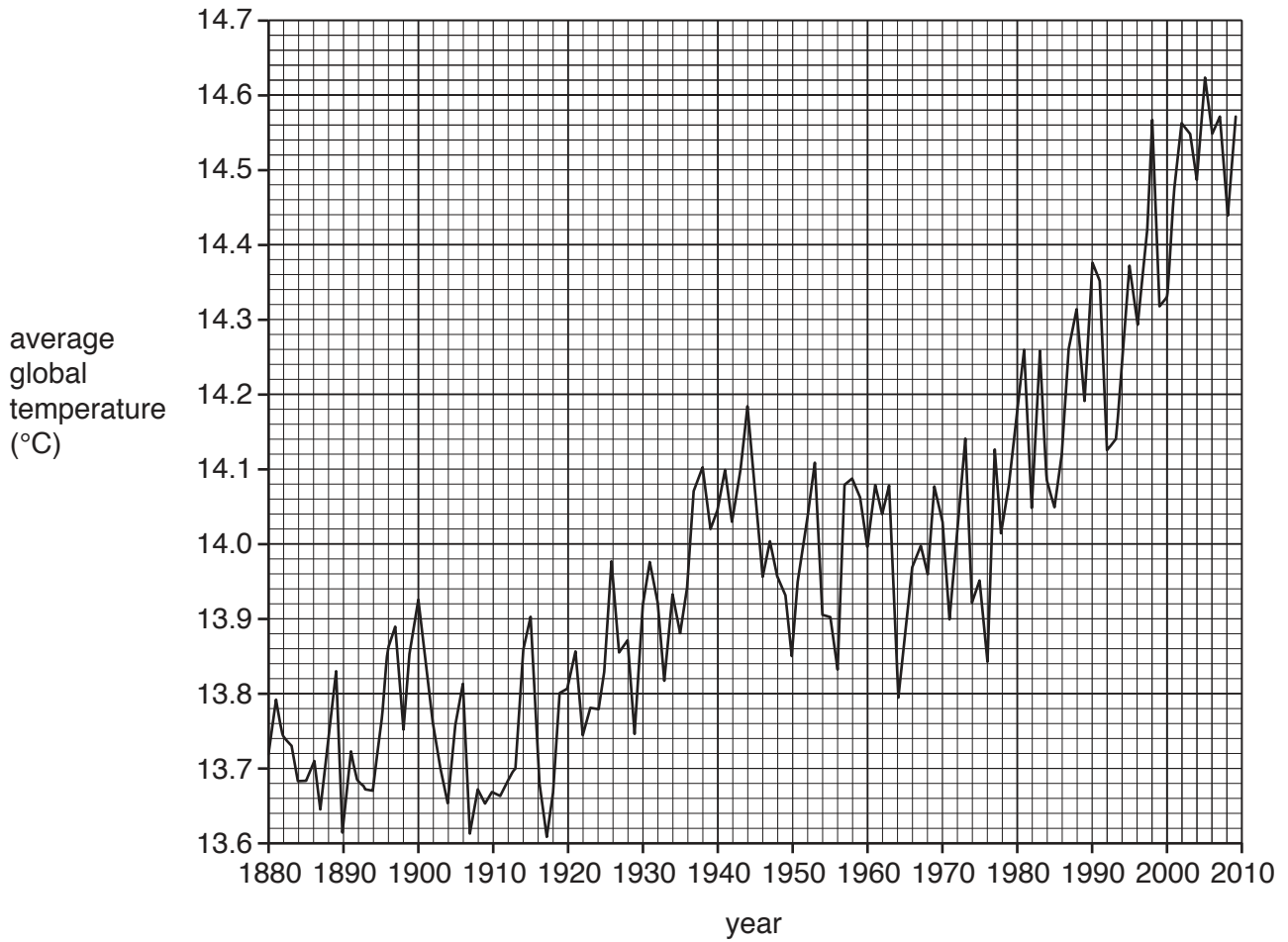


Fig. 3.2

(i) Using Fig. 3.2 **only**, describe the increase in average global temperature between 1880 and 2010. You should use data in your answer.

.....

.....

.....

.....

.....

.....

..... [3]

(ii) Explain why average global temperature has increased between 1880 and 2010.

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

(c) Study Fig. 3.3, information about the likely impacts of an increase in average global temperature.

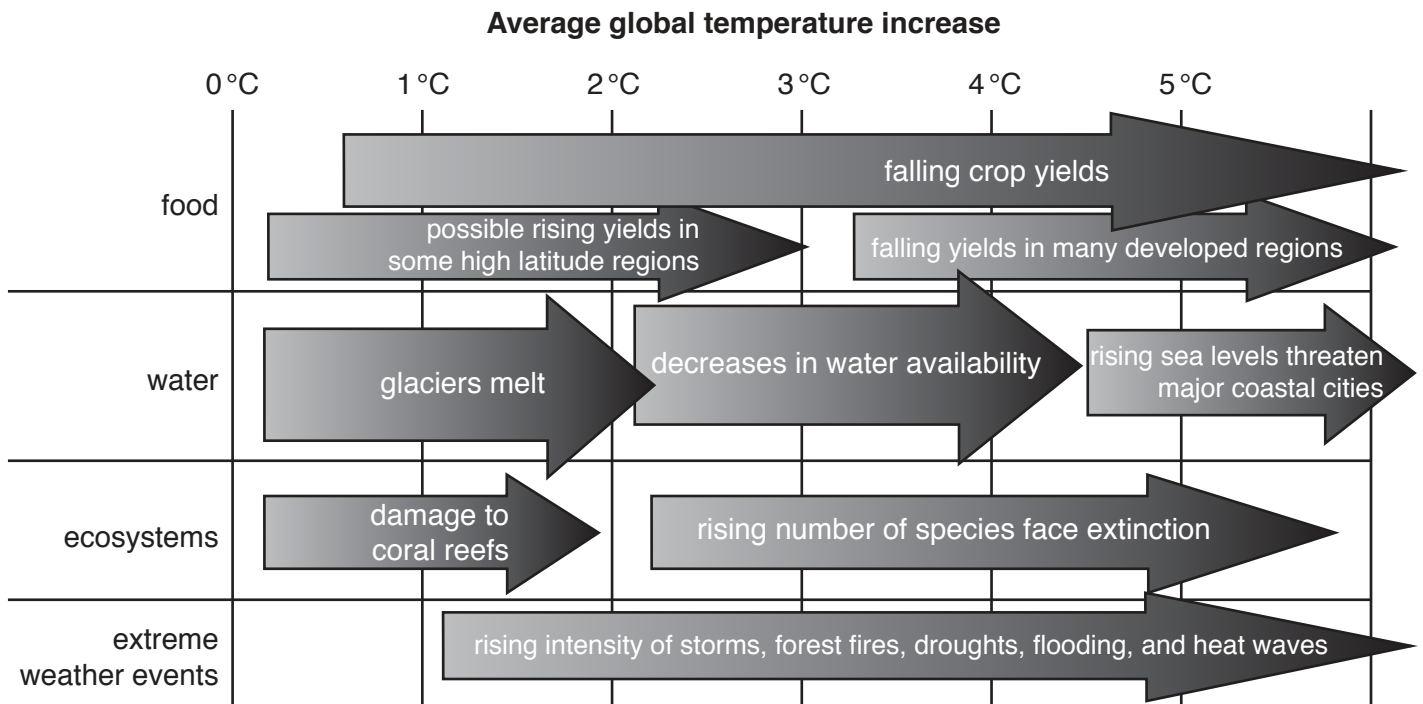


Fig. 3.3

(i) Identify from Fig. 3.3, **two** different impacts of an increase in average global temperature on the natural environment.

1

2

[2]

- (ii) Explain why an increase in average global temperature will reduce supplies of food for many people in developing countries.

.....

.....

.....

.....

..... [2]

- (iii) Explain why the governments of some countries are more concerned about an increase in average global temperature than others.

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

- (d) Study Fig. 3.4, an article about the Maldives, a country made up of many islands in the Indian Ocean, along with Fig. 3.5, Fig. 3.6 and Fig. 3.7 (Insert), photographs taken in the Maldives.

Looking down from a seaplane flying above the Maldives, the coral islands are spread across the water.

We land at a remote island, Maduvvari, with the vice-president of the Maldives, Mohamed Waheed. Maduvvari is home to about 2000 people.

The vice-president takes me to a beach that used to be a road. It has now been covered by the sea, and houses nearby are crumbling into the water. They are dredging sand from the lagoon to build temporary flood barriers.

“How long do you think this island can be inhabited?” I ask.

“Not more than 20 years,” he says, “then we will have to abandon it. Children in the primary school now will not be able to live here, many will emigrate to other islands.”

The vice-president has warned that people might have to emigrate to a new country unless sea-level rise can be prevented.

So this week he announced that the Maldives hoped to become the world’s first country to meet all its energy needs from renewable sources, like wind and solar power.

Another possible solution is to build high artificial islands. About 80% of the country’s land is less than a metre above sea level, but on the island of Hulhumale you can actually look down on the sea from a height.

The whole island has been raised and reclaimed using sand, concrete and shingle, to protect it from storm surges and higher tides, which could provide a solution that will allow people to continue living in the Maldives for hundreds of years.

“We’re proposing big new islands which are built up to three metres high in seven different parts of the country,” he says. “That will be enough for the entire Maldives population, 300 000 people. The people who don’t want to move to other countries can move to higher ground within the Maldives.”

Fig. 3.4

The government of the Maldives is concerned about the impacts of rising sea levels caused by increasing average global temperature.

Study Fig. 3.8, which shows information about four possible strategies being considered to reduce the impact of rising sea levels.

Strategy A

Use renewable energy supplies, such as wind and solar power.

Strategy B

Give grants to the local authorities to build flood barriers around all islands.

Strategy C

Build new islands in seven different parts of the country to a height of 3 metres above sea level.

Strategy D

Encourage emigration to other countries.

Fig. 3.8

