

Write your name here

Surname

Other names

Pearson
Edexcel GCSE

Centre Number

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Candidate Number

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Geography B

Unit 3: Making Geographical Decisions

Higher Tier

Friday 17 June 2016 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

5GB3H/01

You must have:

Resource Booklet (enclosed)

Total Marks

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Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 53.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*
- The marks available for spelling, punctuation and grammar are clearly indicated.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL questions.

1 Study Section 1 (pages 2 and 3) of the Resource Booklet and answer the following questions.

(a) (i) Define the term **extinction**.

(1)

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(ii) Outline the evidence that we are living in a sixth 'extinction event'.

(3)

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(b) Study Figure 1a.

Explain why the extinction of plant species impacts on the survival of animal species.

(3)

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(c) Study Figure 1b.

Describe the distribution of global 'hotspots' of biodiversity.

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(Total for Question 1 = 10 marks)

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2 Study Section 2 (pages 4, 5 and 6) in the Resource Booklet and answer the following questions.

(a) Study Figure 2a.

Describe the main causes of animal extinctions since 1600.

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(b) Study Figures 2a and 2b.

Explain why many natural habitats are likely to disappear by 2060.

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(c) Study Figure 2c.

Outline **two** reasons why there is a serious threat to biodiversity in areas of rapid population growth.

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(d) Study Figures 2d and 2e.

Explain why the environment is threatened by

(6)

economic growth

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inequalities of wealth and consumption

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(Total for Question 2 = 16 marks)



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***3** Study Section 3 (page 7) in the Resource Booklet.

Use evidence from Figures 3a and 3b and your own knowledge.

Compare the two different theories on the relationship between population growth and resources.

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(Total for Question 3 = 6 marks)



Spelling, punctuation and grammar will be assessed in your answer to this question.

***5** Study the four options about the declining biodiversity of the planet.

Option 1: Biodiversity decline is mainly caused by population growth. Governments must tackle this immediately and slow down population growth, to gain some time.

Option 2: Biodiversity decline is mainly caused by economic growth. Governments must tackle this immediately and slow down economic growth, to gain some time.

Option 3: Biodiversity decline can be prevented by creating new technologies. Governments must spend much more money researching solutions despite the cost to us all.

Option 4: Biodiversity decline seems unavoidable. Governments should carry on as they are now and hope for the best.

Select **one** option.

Justify your choice.

Use information from the Resource Booklet and your own knowledge from Units 1 and 2 to support your answer.

Chosen option

(12)

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(Total for spelling, punctuation and grammar = 3 marks)

(Total for Question 5 = 15 marks)

TOTAL FOR PAPER = 53 MARKS



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Pearson Edexcel GCSE

Geography B

Unit 3: Making Geographical Decisions

Friday 17 June 2016 – Afternoon

Resource Booklet

Paper Reference

5GB3F/01

5GB3H/01

Do not return the Resource Booklet with the question paper.

Instructions

- Read the information on the problem on page 2 first.
- You are advised not to write for the first 30 minutes, read and make pencil notes only during this time.
- When reading, make links with other topics you have studied in Unit 1 (eg Water World and Changing Climate) and Unit 2 (eg Population Dynamics and Development Dilemmas).

Turn over ►

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INTRODUCTION TO THE PROBLEM

The problem

The rapid extinction of plant and animal species poses a threat to the human race.

How can we deal with this?

- Some people believe that we must control population growth.
- Others think we need to control economic growth and reduce inequalities.
- Another view is that technology will solve the problem.

Section 1 – The health of global ecosystems

- There are about 1.5 million species of plants and animals on Earth.
- The number and variety of these plants and animals, from bacteria to more complex organisms, is known as biodiversity.
- Extinction of a species is usually a natural result of evolution as plants and animals change and adapt to changing environments.
- Current rates of extinction are at least 100 times faster than the natural rate.
- In the past, long before humans evolved, there were five major periods when extinction rates were very high, known as 'extinction events'.
- Some scientists regard the present period of Earth history as a sixth 'extinction event', thought to be caused by human activity.
- The rate of species loss is as high as 30,000 a year, faster than anything before in the history of the planet (see Figure 1a).
- Many of these plants and animals are vital for the sustainability of the global ecosystems on which we depend.

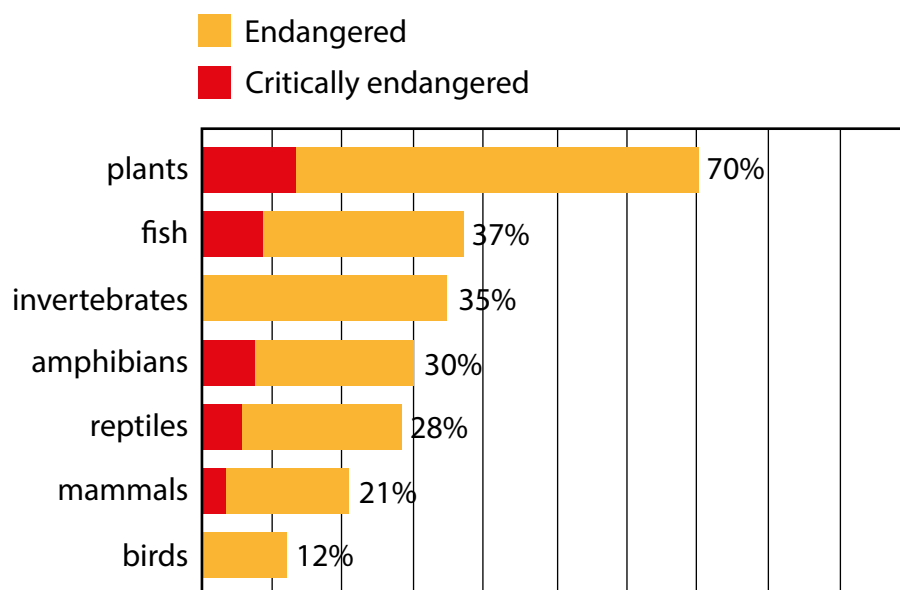


Figure 1a

The percentage (%) of plant and animal species that are endangered

- A decline in biodiversity threatens human survival because of our dependence on a complex food web.
- An example of this is the decline in the number of bees, which pollinate important food crops.
- Biodiversity varies from place to place and environmental groups have identified 34 parts of the world that are especially important 'hotspots' (see Figure 1b).
- These areas cover only 2.3% of the Earth's land surface but contain about 50% of all plant species and over 40% of all animal species.

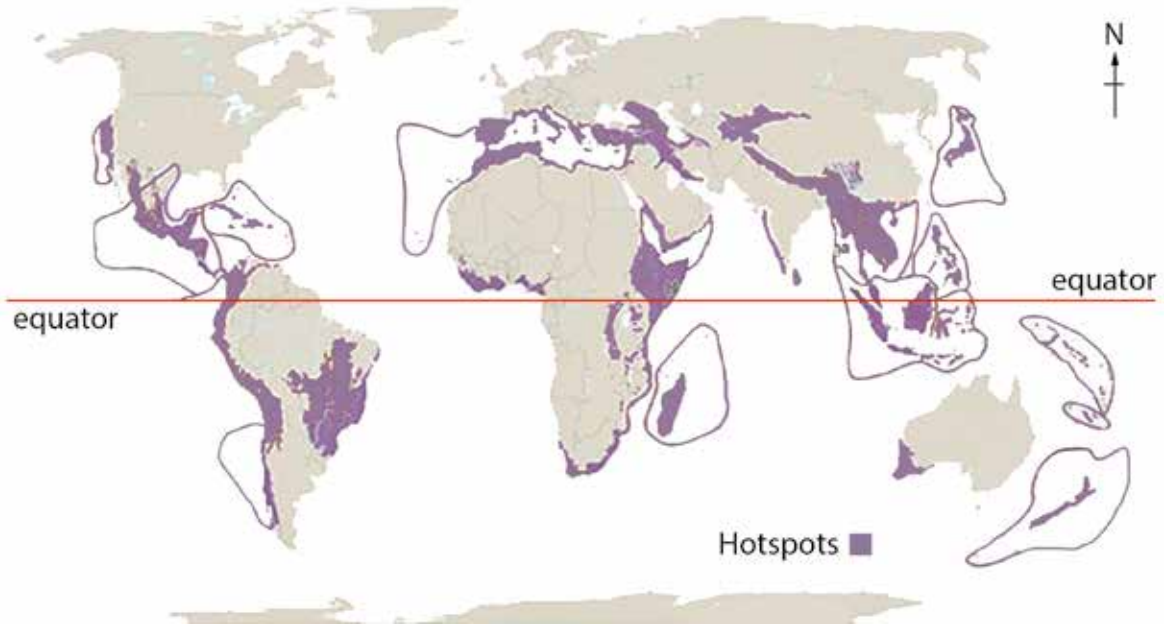


Figure 1b
Global 'hotspots' of biodiversity

Section 2 – The basic causes of declining biodiversity.

Population growth

- Increases in fishing and the amount of land used for agriculture are often blamed on an increasing global population.
- About 50% of the planet's natural habitats have been cleared for human use, mostly for agriculture, and another 0.5% to 1.5% is being cleared each year.
- In many parts of the world humans have introduced species that are not native to the area.
- This has led to the extinction of native plants and animals because they cannot compete with the new arrivals.
- Some species have been hunted to extinction.
- Many scientists believe that climate change will speed up the rate of species decline.

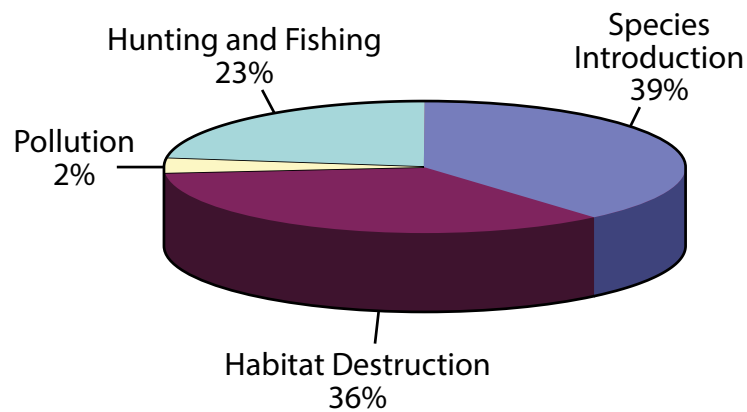


Figure 2a

Causes of animal extinctions since 1600

- The United Nations (UN) has three projections of future population growth that vary according to different forecasts of changes in birth rates and death rates (see Figure 2b).

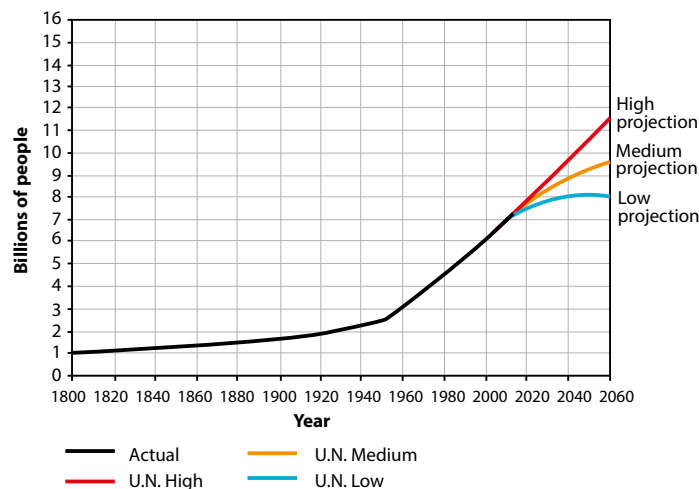


Figure 2b

Global population changes 1800–2015, and projections until 2060

- Some parts of the world will experience much higher rates of population growth than others (see Figure 2c).

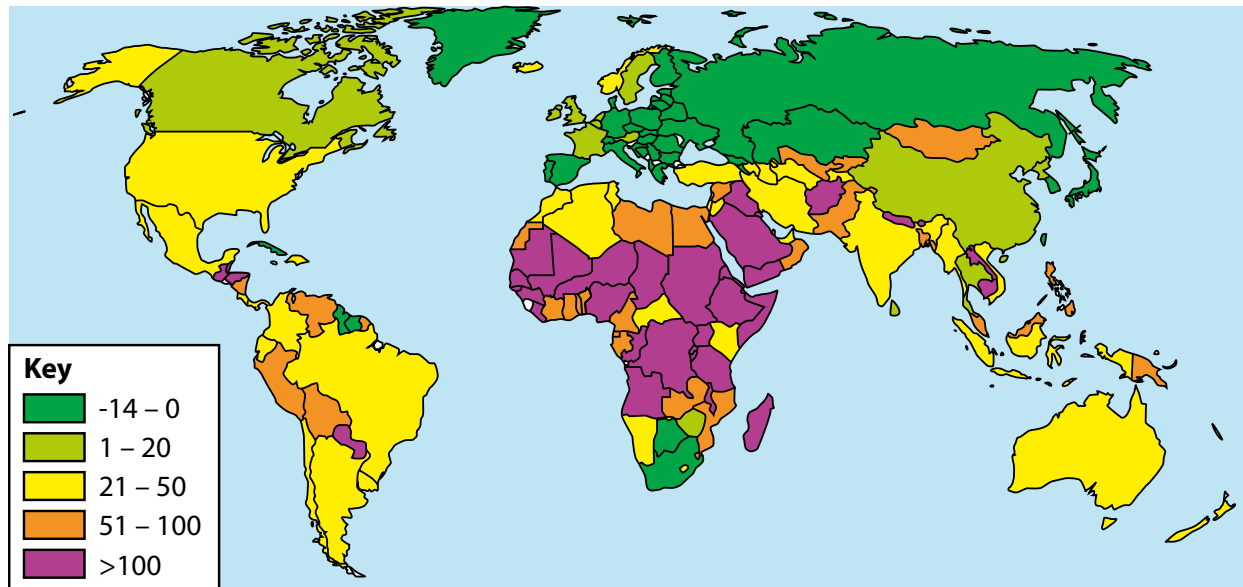


Figure 2c

Projected percentage changes in population 2015–2060

- An increasing amount of land, much of it in biodiversity 'hotspots' in the developing world, is being bought by transnational corporations (TNCs) to grow crops for a global market of agricultural products.
- Local rural populations are often forced to move either to new areas, where they clear forest to farm, or to the rapidly growing cities.

Economic growth

- The faster economies grow, the more resources they consume; for example, the Chinese are opening at least one new coal-fired power station every week to fuel their growing economy.
- Economic growth is predicted to continue (see Figure 2d).
- Every government in the world wants faster economic growth.

	Past → Predicted				
	1961–1980	1981–2000	2001–2020	2021–2040	2041–2060
World	4.2	2.9	2.0	1.5	1.1
Developed Countries	4.1	2.7	1.3	1.3	1.0
Developing Countries	5.3	3.6	2.6	1.8	1.3

Figure 2d

Past and predicted growth rates of Gross Domestic Product (GDP, % average per year)

- The richest 1% of the global population own over 80% of global wealth.
- The vast majority of the richest 20% live in the developed world.
- The richest also consume by far the most (see Figure 2e).
- Some argue that the richest 1%, through their talent and enterprise, create jobs and opportunities for the rest.

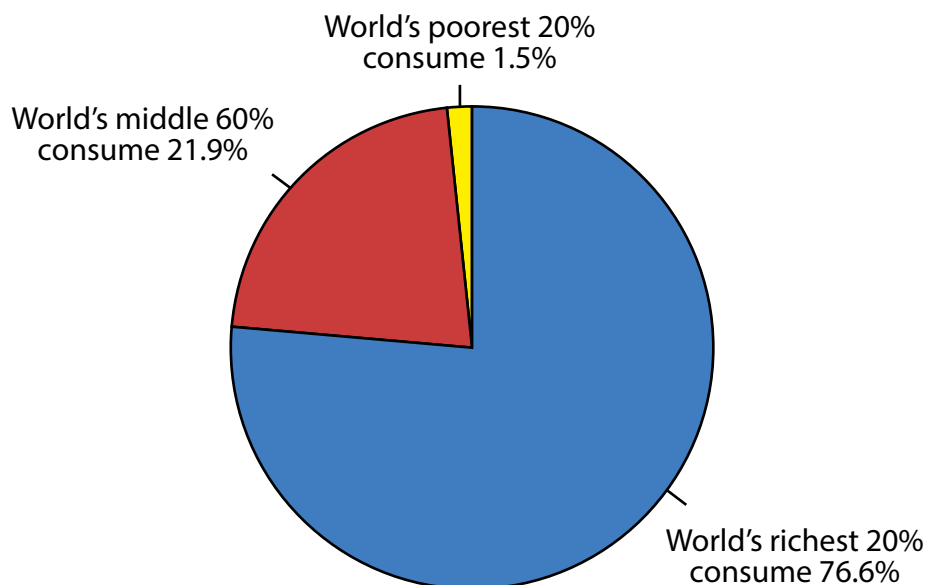
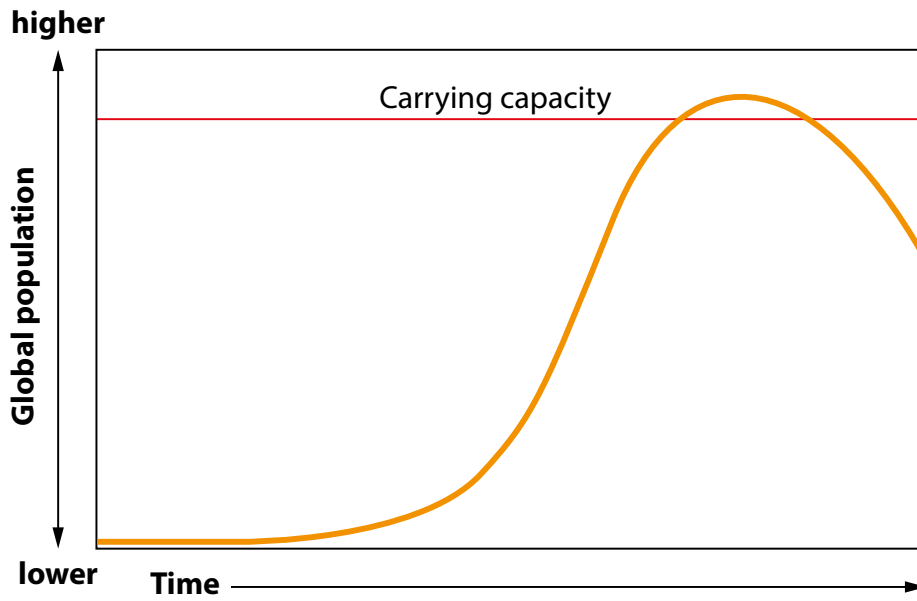


Figure 2e

Global consumption of resources in 2015

Section 3 – Will technology come to the rescue?

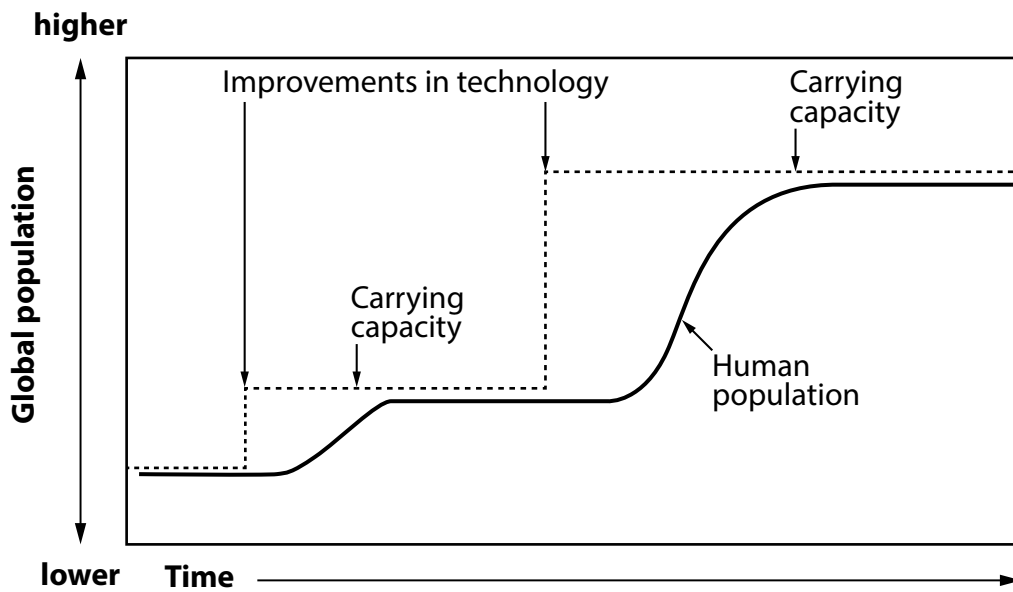


Malthusian Population Growth

Figure 3a

The Malthusian theory of the relationship between population growth and resources

- Malthus believed that population growth inevitably leads to population collapse as resources are exhausted when we reach carrying capacity.



Hundreds of years

Figure 3b

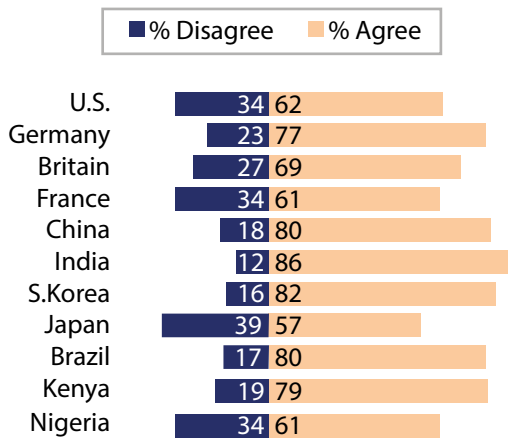
The Boserupian theory of the relationship between population growth and resources

- Boserup suggests that we never reach carrying capacity because of our reaction to increasing shortages of resources.
- As we get closer to the carrying capacity we invent new technologies that solve the problem.

Section 4 – Attitudes to the environment

- Attitudes to the environment and protecting biodiversity vary from place to place and from time to time (Figure 4).
- Although people express concern about the environment they often take a different view when asked about their willingness to pay more to help protect it.

Do you think that we should protect the environment even if it slows economic growth and costs jobs?



Would you be prepared to pay higher prices for food and other goods so that we can protect the environment better?

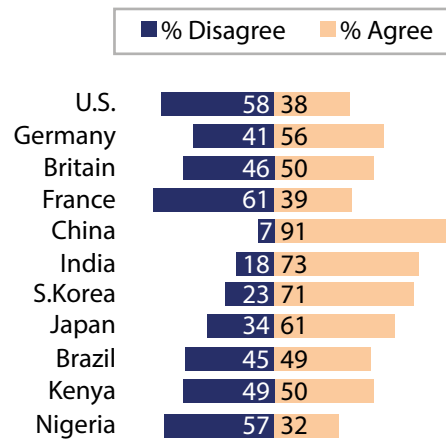


Figure 4

Responses to a survey about the environment carried out in 11 countries