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Pearson
Edexcel GCE

Centre Number

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Candidate Number

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Geography

Advanced

Unit 3: Contested Planet

Thursday 9 June 2016 – Afternoon
Time: 2 hours 30 minutes

Paper Reference

6GE03/01

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 **TWO** questions in Section A and **ALL** parts of Section B.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- The quality of your written communication will be assessed in ALL your responses
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Spend approximately 80 minutes on Section A and 70 minutes on Section B.
- Check your answers if you have time at the end.

Turn over ►

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SECTION A

Answer TWO questions in this section.

You are reminded of the need to use examples to support your arguments.

You are advised to spend approximately 80 minutes on Section A.

Energy Security

1 Study Figure 1.

- (a) Using Figure 1, suggest reasons for the variations in people's attitudes to the different energy sources shown. (10)
- (b) Using named examples, assess the **costs** and **benefits** of exploiting fossil fuels in technically difficult and environmentally sensitive areas. (15)

(Total for Question 1 = 25 marks)

Water Conflicts

2 Study Figure 2.

- (a) Using Figure 2, explain the causes **and** consequences of the differences in water cost. (10)
- (b) Using named examples, assess the extent to which future water demand can be met using sustainable strategies. (15)

(Total for Question 2 = 25 marks)

Biodiversity under Threat

3 Study Figure 3.

- (a) Using Figure 3, suggest reasons for the position of different countries on the forest transition curve model. (10)
- (b) Using named examples, assess the relative importance of different players in biodiversity conservation. (15)

(Total for Question 3 = 25 marks)

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Bridging the Development Gap

4 Study Figure 4.

- (a) Using Figure 4, comment on the value of the four indicators shown as measures of level of development. (10)
- (b) Using named examples, assess the costs and benefits of using aid strategies to help bridge the development gap. (15)

(Total for Question 4 = 25 marks)

The Technological Fix?

5 Study Figure 5.

- (a) Using Figure 5, suggest reasons for the relationship between income per person and internet use shown. (10)
- (b) Using named examples, assess the role of different technologies in reducing the potential threats from global warming both globally **and** locally. (15)

(Total for Question 5 = 25 marks)



Put a cross in the box indicating the first question you have chosen to answer .
If you change your mind, put a line through the box and then put a cross in another box .
You will be asked to indicate your second question choice on page 11.

Chosen question number:

Question 1

Question 2

Question 3

Question 4

Question 5

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Question 1

Question 2

Question 3

Question 4

Question 5

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TOTAL FOR SECTION A = 50 MARKS



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(Total for Question 6 = 40 marks)

TOTAL FOR SECTION B = 40 MARKS
TOTAL FOR PAPER = 90 MARKS



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SECTION A

The following resources relate to Questions 1–5

Statement \ Energy Source	Hydroelectric power (HEP)	Nuclear power	Wind power	Bio-fuels (bioethanol / biodiesel)
1 It is reliable	55	55	40	42
2 It is environmentally friendly	73	22	81	44
3 It is a long-term solution to future energy demands	64	41	68	43

Key: data shown are percentage of people who agreed with the statement

	66% or more of people agree with the statement
	46–65% of people agree with the statement
	26–45% of people agree with the statement
	25% or fewer people agree with the statement

Figure 1

The results of a global survey of people’s attitudes to different energy sources, 2010

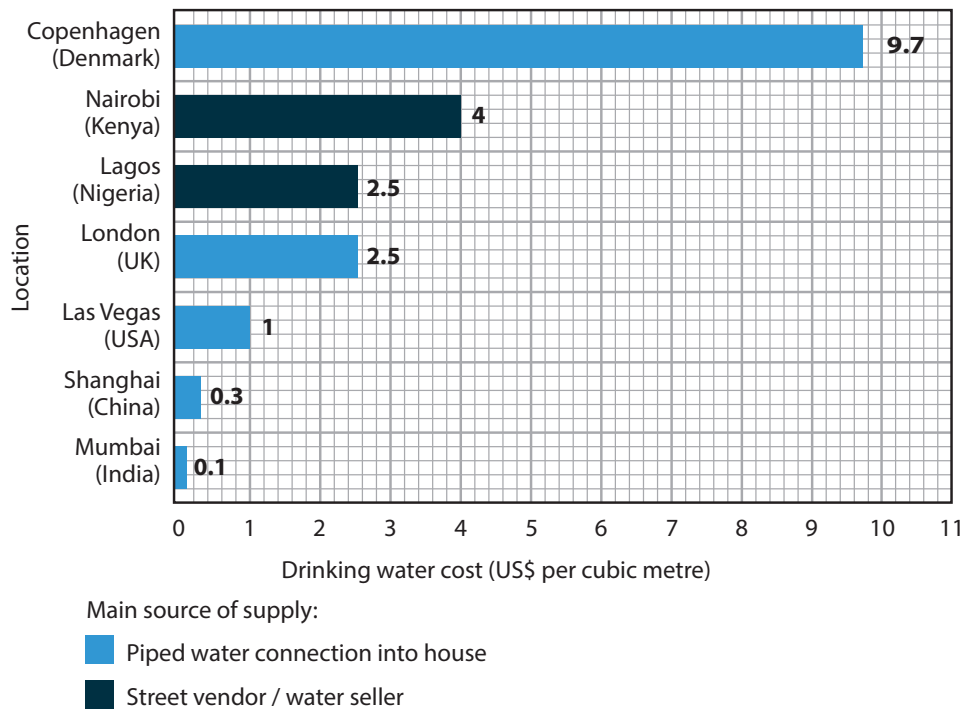
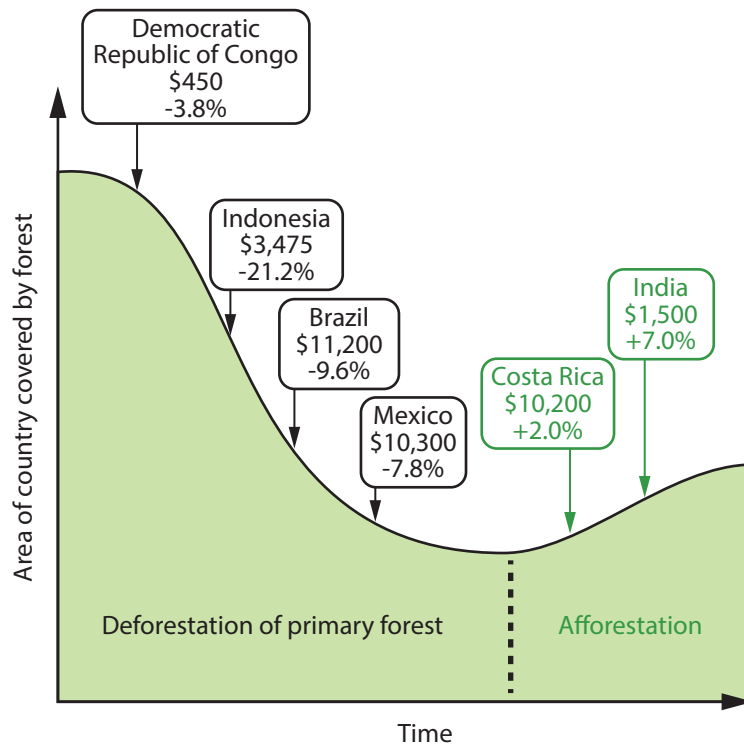


Figure 2
Drinking water costs in seven cities



Key: each box above contains this information:

Country
Income per person in US\$
Percentage (%) change in forest cover 1990–2010

Figure 3

The forest transition curve model for selected countries with tropical forests





Development indicators				
	GDP per person (US \$)	Electricity consumption (kilowatt-hours per person per year)	Proportion of total GDP spent on education (%)	Proportion of seats in national parliament held by women (%)
				
Mexico	10,307	2,092	5.2	37
Philippines	2,765	647	2.7	27
Rwanda	633	41	5.1	64

Figure 4
Development indicators for three countries

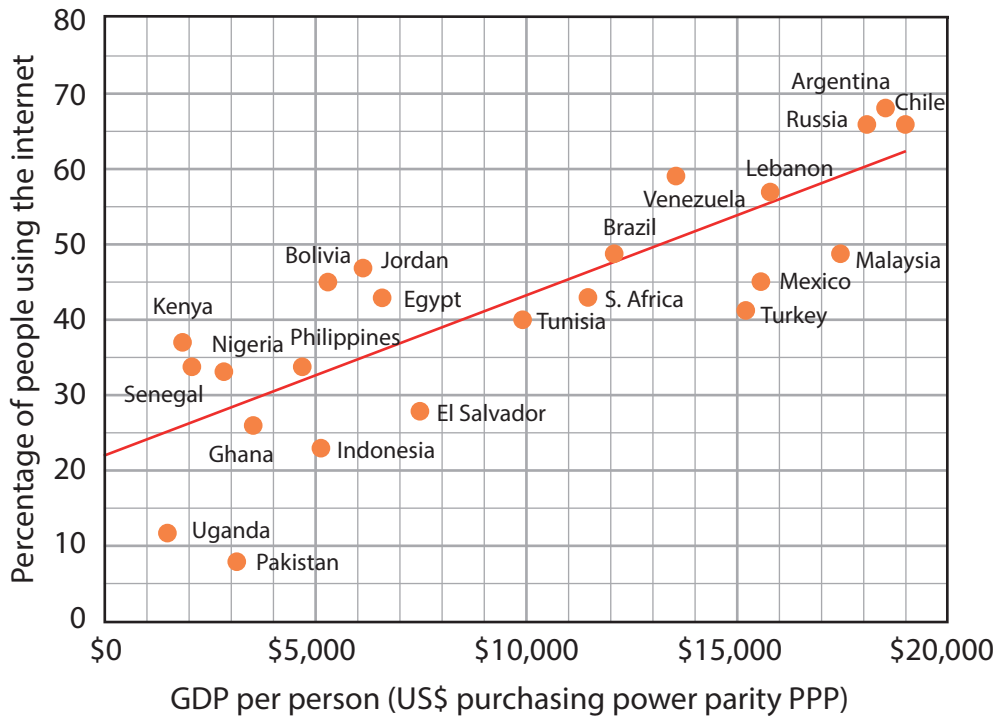


Figure 5

The relationship between income per person and internet use in developing countries, 2013

SECTION B

The following sources relate to Question 6.

SUPERPOWER GEOGRAPHIES

21st Century Superpowers: India and China?

In terms of population, China and India are the two largest nations on earth. In 2014 there were 1,366 million Chinese and 1,249 million Indians together totalling over 36% of the global population. China's economy is the largest in Asia, India's the third largest (Figure 1).

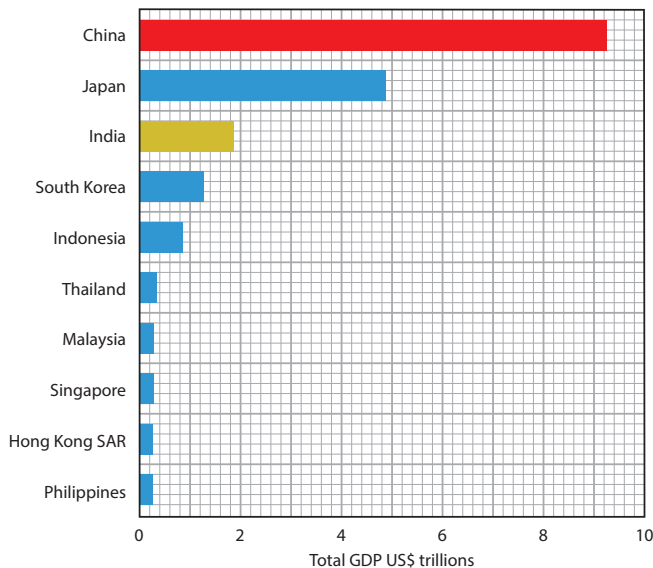


Figure 1: Total GDP for 10 Asian Countries, 2014

Both India's and China's economies have frequently experienced impressive growth rates in the last two decades (Figure 2). Annual GDP growth rate needs to exceed annual population growth rate if a country is to achieve genuine economic growth and rising wealth per person.

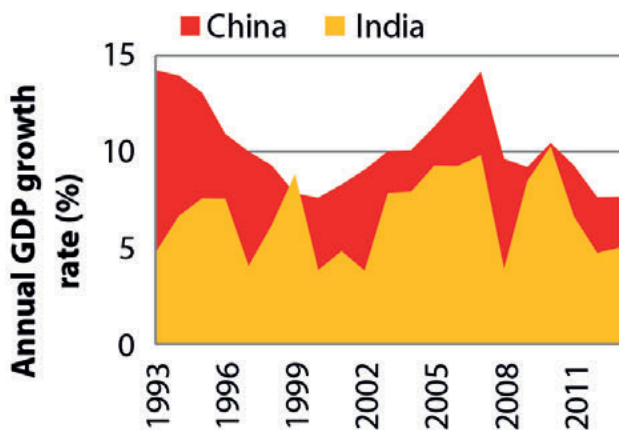


Figure 2: Annual economic growth rate for India and China 1993–2013

Both India and China are major global trading nations, but their major imports and exports differ, as does the destination of their exports (Figure 3).

	China	India
Top 5 imports	Crude oil (14%) Microchips (7.6%) Iron ore (5.3%) Gold (3.6%) Cars (2.9%)	Crude oil (30%) Gold (11%) Coal (3.5%) Diamonds (3.3%) Gas (2.8%)
Top 5 exports	Computers (9.9%) Broadcasting equipment (5.2%) Telephones (4.3%) Office machine parts (2.2%) Microchips (2.0%)	Refined petroleum (19%) Jewellery (6.5%) Medicines (4.0%) Rice (2.2%) Cars (1.8%)
Top 5 export destinations	USA (19%) Hong Kong (11%) Japan (8.3%) Germany (4.4%) South Korea (3.7%)	USA (12%) UAE (12%) China (5.8%) Singapore (4.5%) UK (3.3%)

Figure 3: India's and China's trade, 2013 (% of total)

Businesses in China and India differ:

- In China there are around 155,000 **state-owned enterprises**, owned and controlled by national and local governments.
- In India the number is much smaller, with a few hundred companies owned by national government and around 800 owned by state governments.
- In India foreign retail brands such as Tesco, Carrefour and Wal-Mart have struggled to gain market access due to policies designed to protect small Indian retailers.
- Foreign companies wishing to manufacture and sell in China are often required to set up a **joint venture** with a Chinese company.

A decade ago few of the world's largest TNCs were Chinese or Indian but that has changed (Figure 4):

Number of Fortune 500 companies from:	2004	2014
USA	189	128
Japan	82	57
China	16	95
India	4	8

Figure 4: Fortune 500 companies in 2004 and 2014

Foreign Direct Investment is important to both China and India. Figure 5 shows part of the World Bank's *Doing Business* rankings for 2013. This attempts to quantify the ease of starting and operating a new business in different countries (a higher score indicates a greater difficulty for a particular component in the rankings).



Figure 5: Selected 'Doing Business' rankings for 2013 for China, India and the USA

Contrasting visions?

China and India score differently using indicators of development and progress, such as the **HDI** and **Gini Coefficient**. The **Social Progress Index (SPI)** is an alternative way to measure national progress. It has three components:

Component	Indicators
Basic Human Needs (BHN)	Nutrition and basic medical care, personal safety, water and sanitation, shelter.
Foundations of Wellbeing (FW)	Access to basic knowledge, access to ICT, health and wellness, ecosystem sustainability.
Opportunity (OP)	Personal rights, personal freedom and choice, tolerance and inclusion, access to advanced education.

The 2014 SPI ranked 132 countries, from 0 (worst) to 100 (best) for individual indicators and components. Some results from the 2014 SPI are shown in Figure 6.

Country	Total SPI Rank	Total SPI score	BHN score	FW score	OP score
New Zealand	1	88.2	91.7	84.9	88.8
UK	13	84.5	91.9	79.4	82.2
China	90	58.6	73	63.7	39.2
India	102	50.2	54.4	56.8	39.3
Chad	132	32.6	25.9	42.4	29.4

Figure 6: Selected results from the 2014 SPI

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India and China operate different **political systems**. India is the world's largest democracy. In the general election held in 2014, 814 million Indians over the age of 18 were eligible to vote (the turnout was 66%), an increase of 100 million voters compared to the previous general election in 2009. The elected members of the Lok Sabha (lower house of parliament) vote to decide who will be India's prime minister.

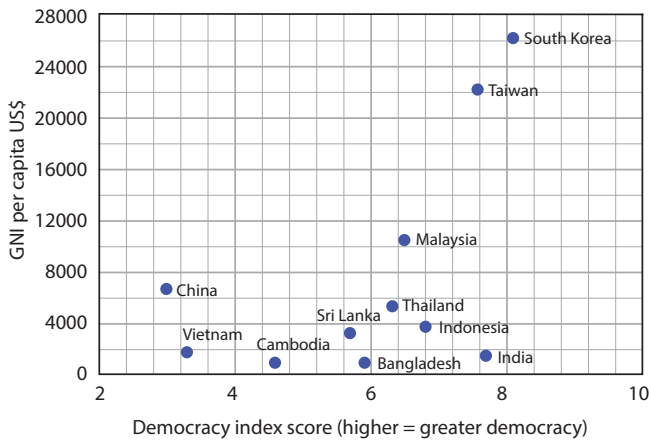


Figure 7: Democracy versus economic development in Asia, 2013

China has been ruled by the Communist Party of China since 1949 as a single-party state. General elections are not held in China, although Local People's Congresses are directly elected. Some Asian countries **industrialised** before moving towards full democracy. Examples include South Korea which moved to full democracy in 1987 and Taiwan in 2000. Figure 7 shows the relationship between economic development and democracy.

The two countries have different government spending priorities. In 2013 Chinese spending on **infrastructure** (transport, energy and utilities) accounted for half of all infrastructure spending in the Asia-Pacific region (Figure 8).

- In 2013 spending on healthcare accounted for 12.2% of Chinese government public spending, versus 8% in India.
- 16.3% of government spending in China in 2013 was on education, versus 11.3% in India.

Historically India has provided **subsidies** to help low income families afford basic necessities (especially food, fuel and fertilizers). In 2013–14 these subsidies amounted to around \$60 billion, or more than 15%, of government spending.

In 2012, 400 million people in India lived below the \$1.25 per day World Bank poverty line, whereas in China, 680 million people moved out of extreme poverty between 1981 and 2012.

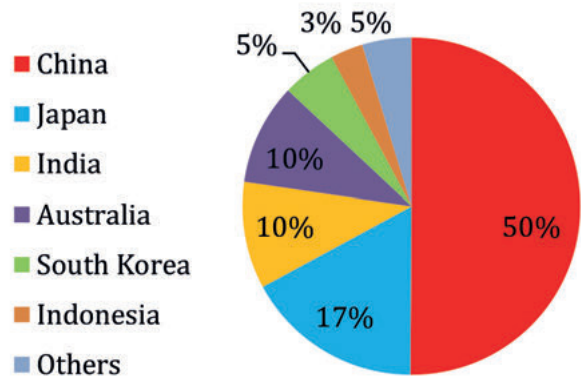


Figure 8: Share of infrastructure spending in the Asia-Pacific region, 2013

Neither China's or India's military spending matches that of the USA, which in 2014 spent around US\$ 640 billion. However, as Figure 9 shows, there have been changes over time to military spending.

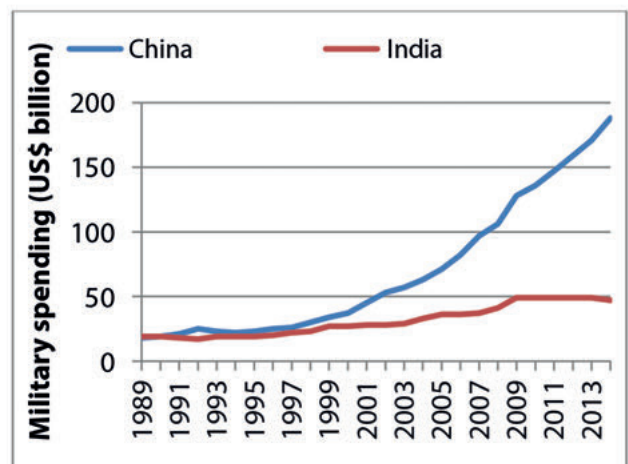


Figure 9: Annual military spending, 1989–2014, for China and India.

Looking forward

China and India are on very different trajectories in terms of their total populations and structure (Figures 10 and 11). This will have major impacts on their future **demographic dividends**.

(Total population, millions)	2020	2030	2040	2050
China	1,384	1,391	1,358	1,303
India	1,326	1,460	1,571	1,656
USA	336	365	393	422
Indonesia	267	288	304	313

Figure 10: Population projections to 2050 for four countries

	% population aged 0–19		% population aged 65+	
	2015	2050	2015	2050
India	37.4	26.6	5.9	14.6
China	23.4	18.1	10.1	26.9

Figure 11: Population in two age categories in 2015 and projected to 2050 for India and China

Predicting the future size of economies is very difficult. The case of **Japan's lost decade** shows that assumptions about the future economic health of nations are at most a best guess. In 2010 Standard Chartered predicted China's total GDP in 2030 would be \$73.5 trillion, which compares with a prediction of \$25 trillion by 2030 made by PwC in 2013.

Figure 12 shows yet another prediction for the future size of economies.

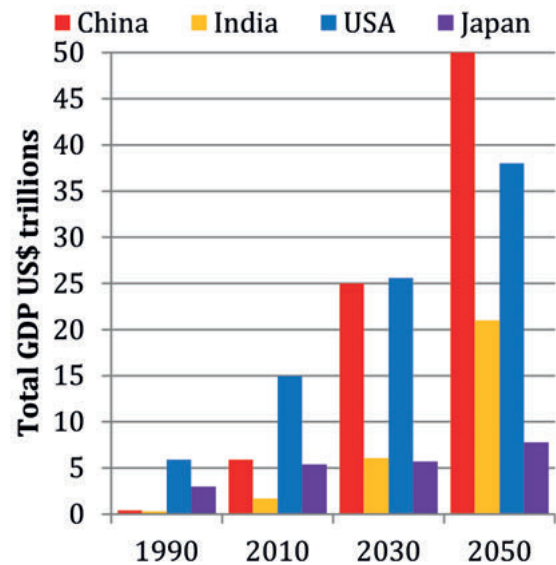


Figure 12: Past and future GDP for four countries.

Resource consumption is rising globally. China and India already consume a significant portion of the world's resources as Figure 13 shows, and this is likely to rise in the future.

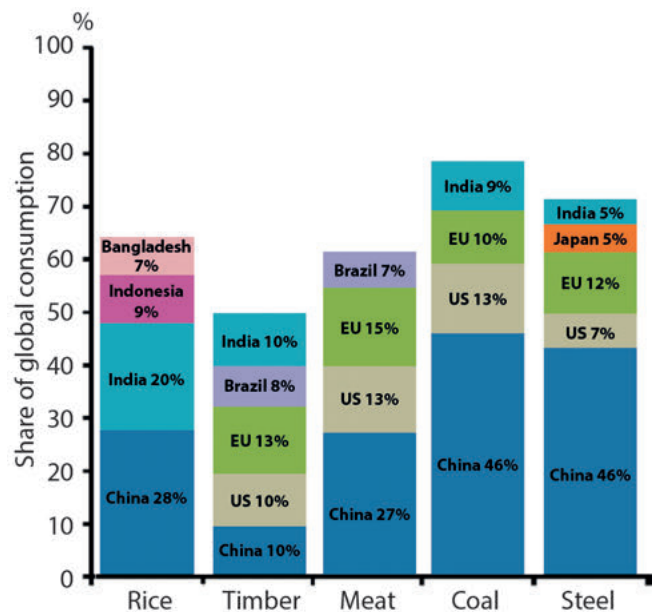


Figure 13: Global resource consumption in 2010

At a global level:

- By 2050, global food demand is expected to have increased by 70–100%.
- In many developing countries, a diet revolution is leading to a **nutrition transition** for millions of people.
- Farming accounts for 70% of freshwater demand worldwide, and often 90% in developing countries.
- 45% of global metal trade is destined for China, more than the 20 next largest importers combined.
- World energy use is expected to increase by 30–60% by 2050 (depending on population and GDP growth, as well as efficiency measures and new technology). Much of this demand will come from China and India.

For China and India, as well as other countries, **future climate change** represents an uncertainty. Figure 14 shows one possible temperature change scenario to 2050.

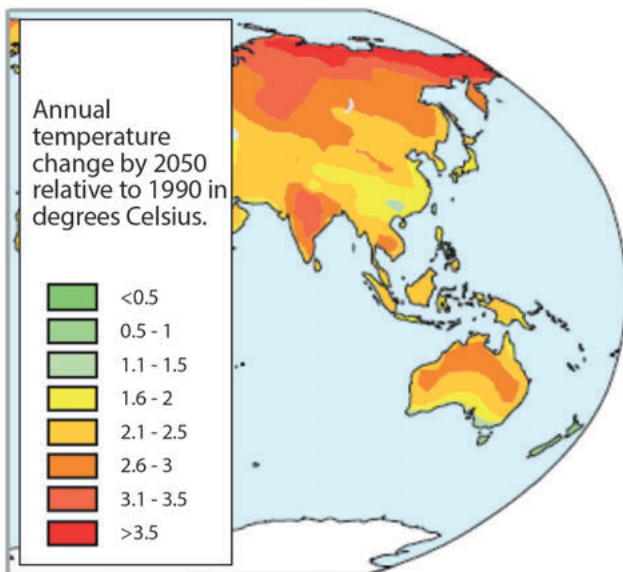


Figure 14: A model of annual temperature change by 2050 in Asia and Oceania



Figure 15: The geopolitical power hierarchy

Views related to India and China

View 1

"Demand for food, water and energy will grow by approximately 35%, 40% and 50% respectively owing to an increase in the global population and the consumption patterns of an expanding middle class. Climate change will worsen the outlook for the availability of these critical resources."

Global Trends 2030: Alternative Worlds (NIC)

View 2

"When adjusted for variations in the cost of living, 32.7 % of India's population live below the international extreme poverty line of \$1.25 per day. India is home to a third of the world's poor, a third of the world's slave population and on a host of other social and development indicators it continues to slip further and further behind other developing countries."

The Diplomat, 2014

View 3

'Until and unless India increases its highways, speeds up its railroads and expands its ports, it will not be able to cater to the 'just in time' supply chain and delivery of modern economies.'

Livemint.com, 2014

View 4

"China's growth model is broken and can't be so easily fixed. Since the start of capitalist reforms in the 1980s, China excelled by throwing tons of resources into a modernizing economy — mountains of cash to build factories, roads and apartment towers, and millions of poor people into making iPads, blue jeans and cars. Under China's 'state capitalism,' bureaucrats often directed the cash into massive infrastructure projects or favoured industries. However, this growth engine can't keep purring indefinitely. The pools of idle labour that filled Foxconn's assembly lines are drying up — China's one-child policy made sure of that, by ageing the population more rapidly. The workforce has already started to shrink."

Time magazine, 2013

View 5

"The disputes between China and several of its neighbours over disputed islands and maritime claims are just the tip of the iceberg. As China becomes an even greater economic power, it will become increasingly dependent on shipping routes for its imports of energy, other inputs, and goods. This implies the need to develop a blue-water navy to ensure that China's economy cannot be strangled by a maritime blockade. But what China considers a defensive imperative could be perceived as aggressive and expansionist by its neighbours and the USA."

The Guardian, 2014

Websites for further research

Economic and social data for China, India and other countries can be obtained from:

<http://data.worldbank.org/>

<https://www.cia.gov/library/publications/the-world-factbook/>

A number of websites consider future global geopolitical trends including:

The US National Intelligence Council <http://www.dni.gov/index.php> and its Global Trends 2030 blog <http://gt2030.com/>

The Rand Corporation <http://www.rand.org/>

Local perspectives on China and India can be explored using online English language news sites, including:

<http://www.chinadaily.com.cn/>

<http://timesofindia.indiatimes.com/>

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