



NATIONAL
Junior College

**National Junior College
SH2 Preliminary Exam 2018**

GEOGRAPHY
Paper 2 Data Response Questions

9751/02

Higher 2

**3 hours
12 September 2018**

READ THESE INSTRUCTIONS FIRST

Write your index number and name on the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Answer **all** questions.

You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested by the question.
Diagrams and sketch maps should be drawn whenever they serve to illustrate an answer.
The world outline map may be annotated and handed in with relevant answers.
You are reminded of the need for good English and clear presentation in your answers.

At the end of the examination, fasten all your answer scripts securely together.
The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **5** printed pages and **1** blank page and **1** insert.

Section A

Theme 4 - Geographical Investigation

- 1 A group of 12 students were tasked to investigate the impact of transnational corporations (TNCs), in particular fast food restaurants, on the local community, the environment and local enterprises.

They decided to examine the impact of a Kentucky Fried Chicken (KFC) outlet in Greenridge Shopping Centre on the community in Bukit Panjang, especially after KFC Singapore rolled out the 'No Straws' Initiative nationwide on 20 June 2018.

To carry out their investigation, the students split themselves up into two teams of 6. Team A focused on conducting questionnaire surveys with residents while Team B worked with local enterprises nearby to elicit their views on how KFC has affected their business. They collected data on two days (Friday and Saturday), from 11am to 3pm.

Students from Team A distributed themselves in Greenridge Shopping Centre and interviewed about 15 residents at random. When they got together to corroborate their responses after the first hour, they found that their responses were similar. In an attempt to gather more varied responses, one of the students suggested interviewing people of different demographic profile by being more deliberate in their choice of respondents. Team A then split themselves into pairs and went to the nearby housing estates to conduct more interviews.

Students from Team B tried to speak with local enterprises in Greenridge. However they were either given very short and curt responses, or rejected. One of the students then suggested taking photographs and videos as data instead.

Study Resources 1 to 3. Resource 1 shows the demographic profile of the respondents interviewed by Team A. Set A refers to the first 15 respondents whom the students interviewed in Greenridge Shopping Centre. Set B refers to the subsequent 30 respondents whom the students interviewed at the nearby housing estates. Resource 2 shows the data representation of responses from selected questions carried out by Team A. Resource 3 shows a photograph of a notice taken by Team B at the Kopitiam in Greenridge Shopping Centre.

- (a)** Suggest a research question for the investigation and explain its suitability. [4]
- (b)** With reference to Resource 1, explain how the change in sampling techniques used in Set A and Set B may have improved Team A's findings. [4]
- (c)** Identify the data representation method shown in Resource 2 and assess whether it is appropriate. [4]
- (d)** Explain the ethical concerns of using photographs and videos as data for the investigation. [4]
- (e)** Evaluate the usefulness of the data shown in Resources 2 and 3 in helping to ascertain the extent of a TNC's impact on the local community where it operates. You may refer to your own knowledge where necessary. [9]

Section B

Theme 1 – Tropical Environments

Arid regions and the Sahara Desert

- 2** Resource 4 shows the global distribution of deserts in the world. Resource 5 shows a photograph of a landform found in an arid region. Resource 6 shows a photograph of sand dunes in a desert.
- (a) With reference to Resource 4, describe and explain the global distribution of arid regions across the tropics. [5]
- (b) Suggest other possible reasons for the aridity experienced in the Gobi and Atacama deserts respectively as shown in Resource 4. [6]
- (c) Describe and explain the formation of the landform shown in Resource 5. [4]
- (d) Suggest how Resource 5 can prove the existence of variations in past climates in the Sahara desert. [4]
- (e) Using Resource 6 and your own knowledge, how may wind direction influence the development of sand dunes in the arid tropics? [6]

Theme 2 – Development, Economy and Environment

Water Scarcity in India

- 3** Resource 7 shows the groundwater levels of India in 2015. Resource 8 refers to the breakdown of water consumption by sector in India in 2010, 2013 and projection in 2030. Resource 9 consists of an extract from an article on the bottled water industry in India.
- (a) Using Resource 7, describe the distribution of areas with low levels of groundwater in India. [4]
- (b) With reference to Resources 7 and 8, suggest possible reasons for the low levels of groundwater in India. [6]
- (c) Explain the impact of privatising water resources on society and the environment as seen in Resource 9. [6]
- (d) Using Resources 8 and 9 and your own knowledge, discuss the extent to which actors such as TNCs play an important role in managing natural resources. [9]

Theme 3 – Sustainable Development**Sustainable development in Singapore**

- 4** Resource 10 shows the cost of living index from 2003 to 2013. Resource 11 shows a poster on the “Car-Lite” strategy used in Singapore to manage traffic congestion. Resource 12 shows a poster of an initiative to recycle notes in the campus of the National University of Singapore (NUS). Resource 13 shows the 3 aspects of the Sustainable Cities Index, as well as the ranking of a few selected cities in 2016.
- (a)** Using Resource 10, compare the changes in the cost of living index from 2003 to 2013 across Singapore, Shanghai and Tokyo. [5]
- (b)** Describe and explain how the various elements outlined in the strategy of a “Car-Lite” Singapore in Resource 11 can address problems associated with traffic congestion. [7]
- (c)** With reference to Resource 12, explain two ways in which recycling can affect the global carbon cycle. [5]
- (d)** Explain how Resources 10, 11 and 12 can be used to justify Singapore’s ranking on the Sustainable Cities Index as shown in Resource 13. [8]

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READ THESE INSTRUCTIONS FIRST

The insert contains all the Resources referred to in the questions.

This document consists of **14** printed pages.

Resource 1 for Question 1

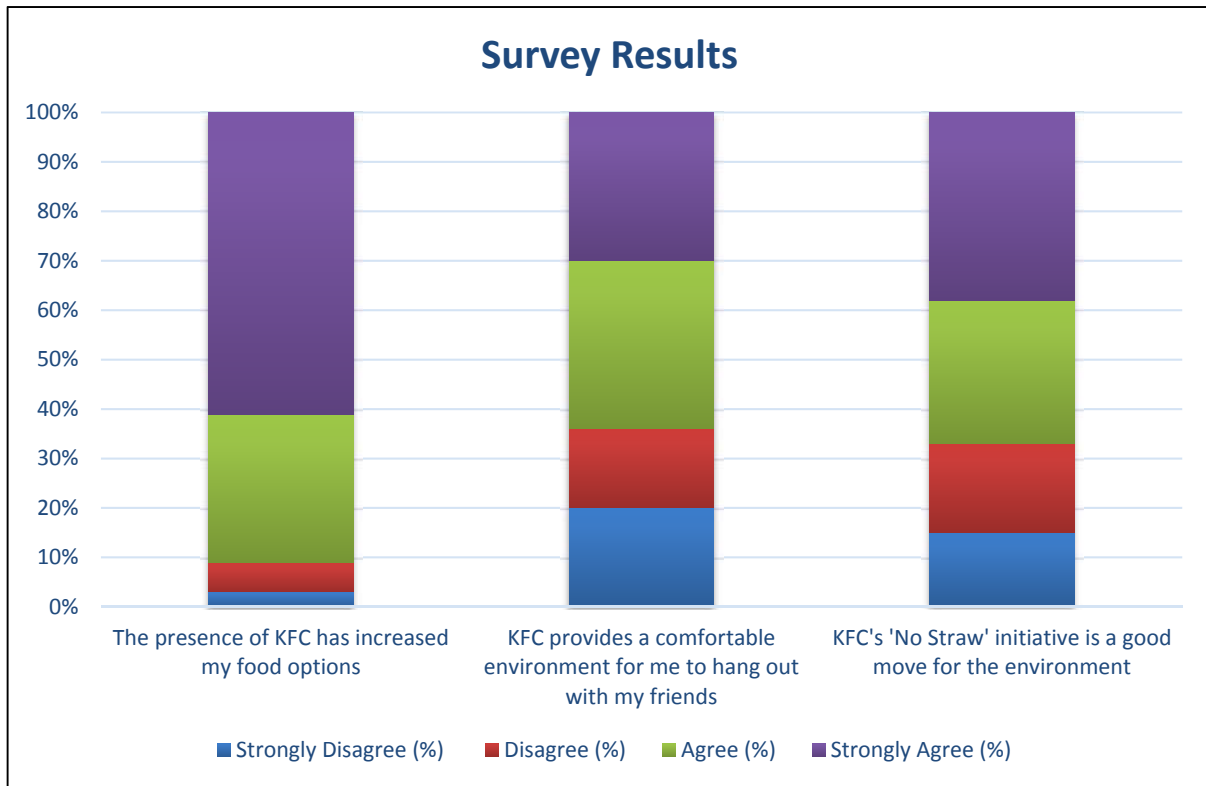
Demographic profile of respondents

		Set A (15)	Set B (30)
Age	0-19	6	5
	20-39	4	10
	40-59	0	10
	60 and above	5	5
Gender	Female	2	16
	Male	13	14
Ethnicity	Chinese	13	16
	Indian	2	7
	Malays	0	7
	Others	0	0

Source: Original

Resource 2 for Question 1

Data representation of responses from selected questions



Source: Original

Resource 3 for Question 1

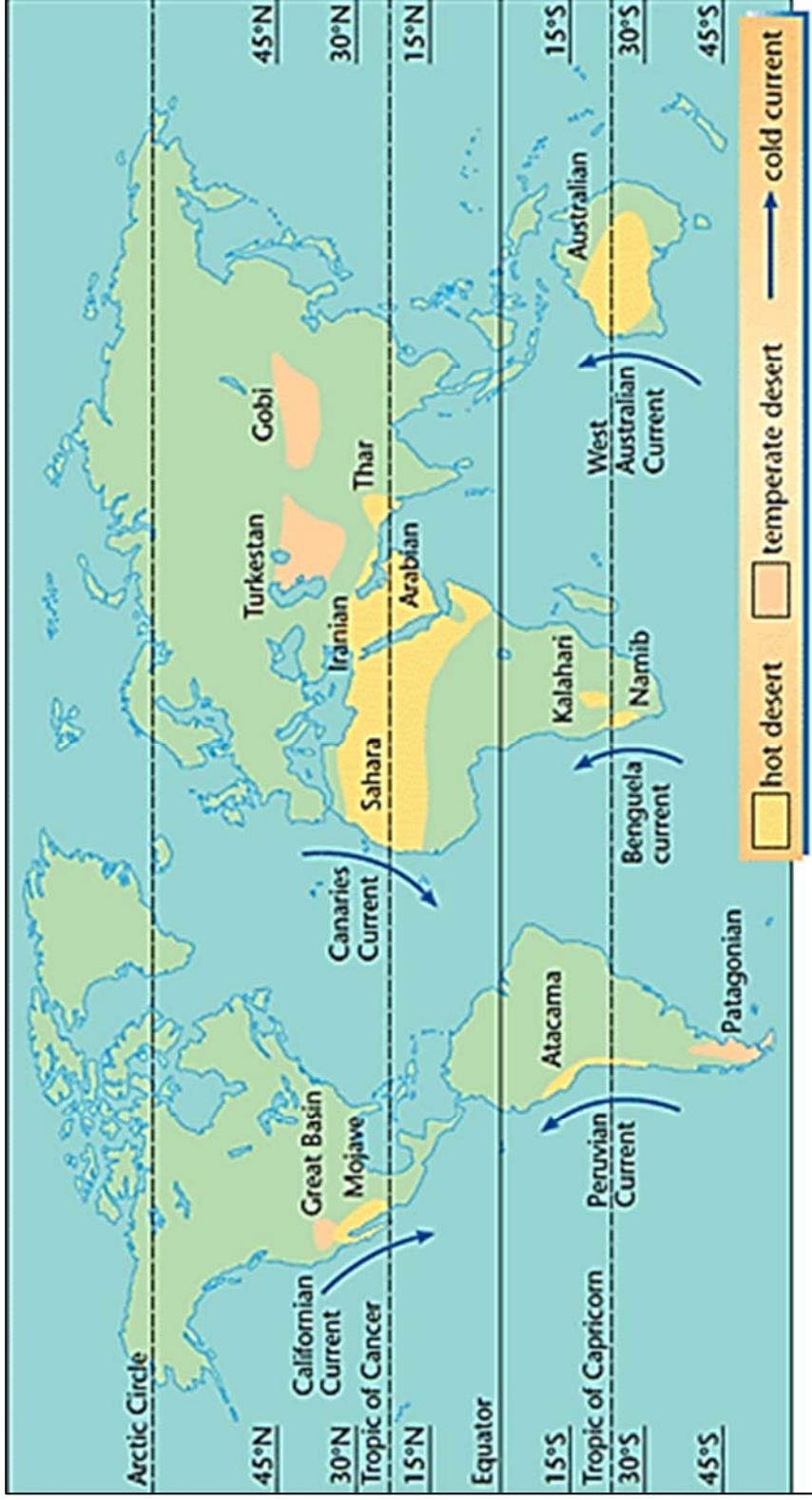
Notice by a Kopitiam outlet at Greenridge Shopping Centre



Source: <https://mothership.sg/2018/09/kopitiam-kfc-straw/>

Resource 4 for Question 2

Global distribution of deserts in the world



Source: <https://revisionworld.com/a2-level-level-revision/geography/arid-and-semi-arid-environments-0/causes-and-distribution-deserts>

Resource 5 for Question 2

Photograph of landform in an arid region



Source: <http://tamop412a.ttk.pte.hu/files/foldrajz1/www/en/ch02.html>

Resource 6 for Question 2

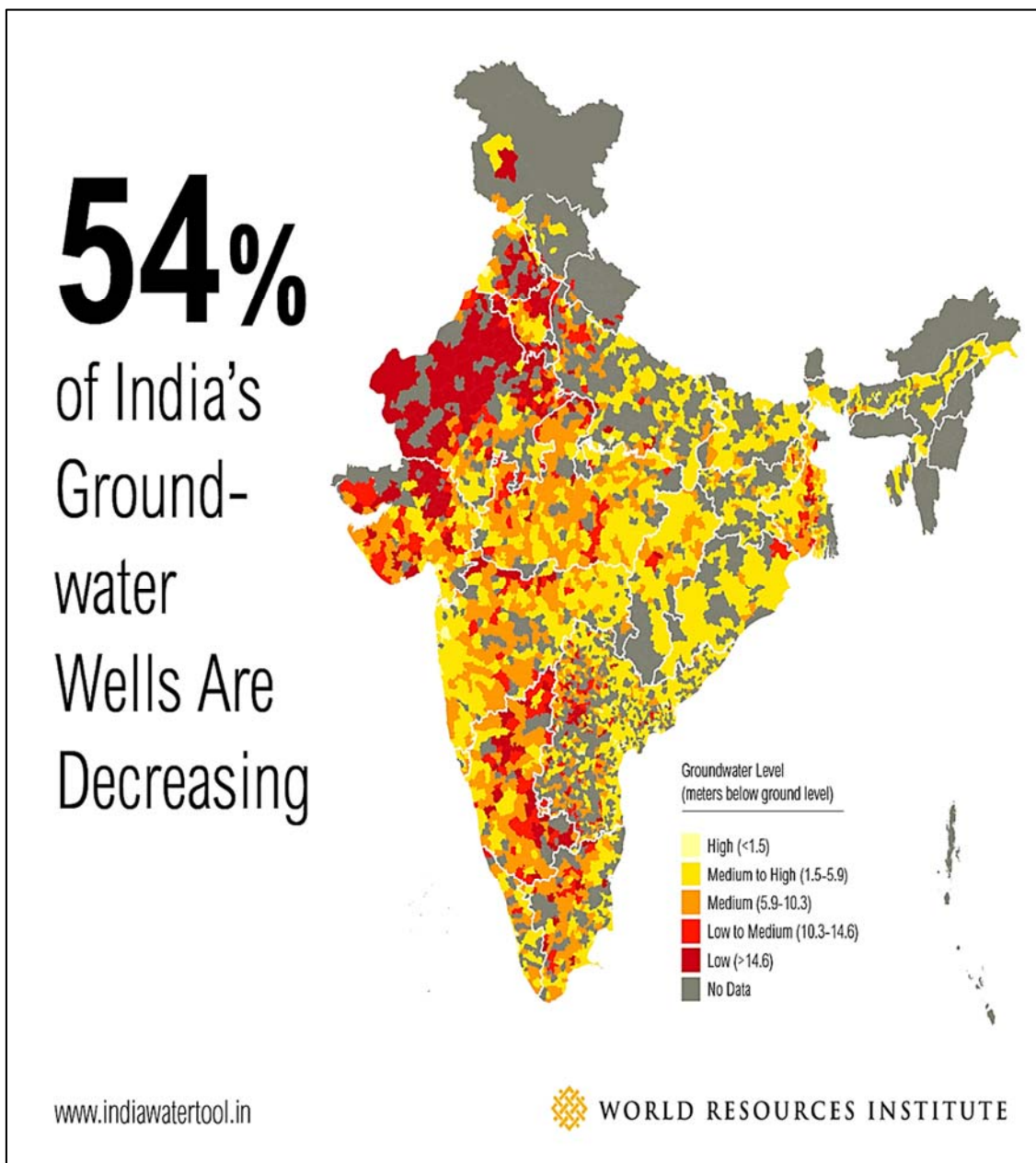
Photograph of sand dunes in a desert



Source: <http://tamop412a.ttk.pte.hu/files/foldrajz1/www/en/ch02.html>

Resource 7 for Question 3

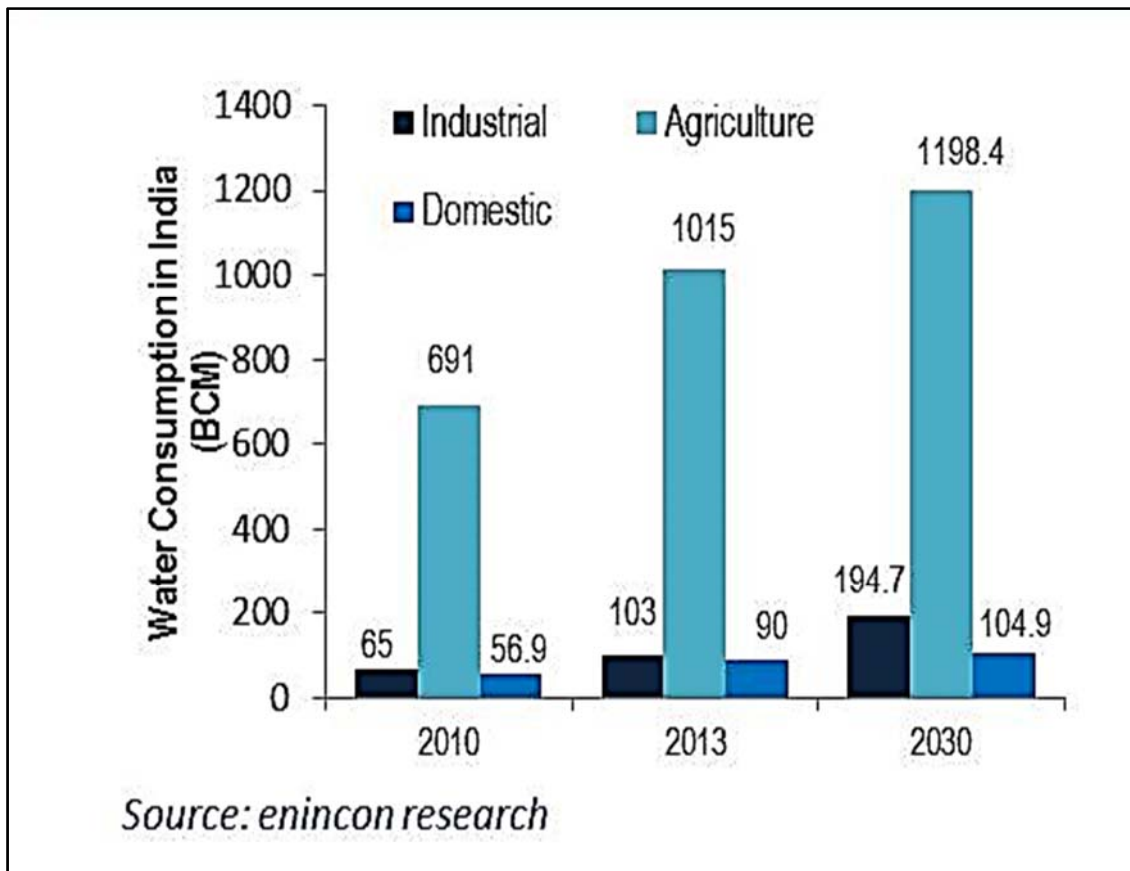
Groundwater levels in India, 2015



Source: <https://www.wri.org/blog/2015/02/3-maps-explain-india%E2%80%99s-growing-water-risks>

Resource 8 for Question 3

Water consumption by sector in India (BCM=billion cubic meters)



Source: <https://www.eninconperspectives.com/burgeoning-water-consumption-and-its-decreasing-availability-in-india-a-demand-supply-mismatch/>

Resource 9 for Question 3**Extract on bottled water industry in India**

As municipal bodies fail to provide safe drinking water, bottled water suppliers do brisk business in India. According to Market Research Euromonitor, the bottled water market in India is estimated to be 4.4 billion litres in volume in 2016, worth Rs 7,040 crore. Bottled water sales are expected to touch Rs 11,000 crore, growing by 25 per cent CAGR to touch Rs 21,500 crore by 2021.

Beverage majors like PepsiCo, The Coca-Cola Company, Bisleri International and Parle Agro are more focussed now on their bottled water divisions. India's home-grown company, Patanjali has also announced plans for foraying into this market, expected to grow three times faster than that of beverages.

A reason for the boom in the bottled water business is water supplies that are too little, too polluted or too mismanaged. India is already reeling under an acute shortage of drinking water. A WaterAid report in 2016 ranked India among the worst countries in the world for the number of people without safe water. An estimated 76 million people in India have no access to safe water.

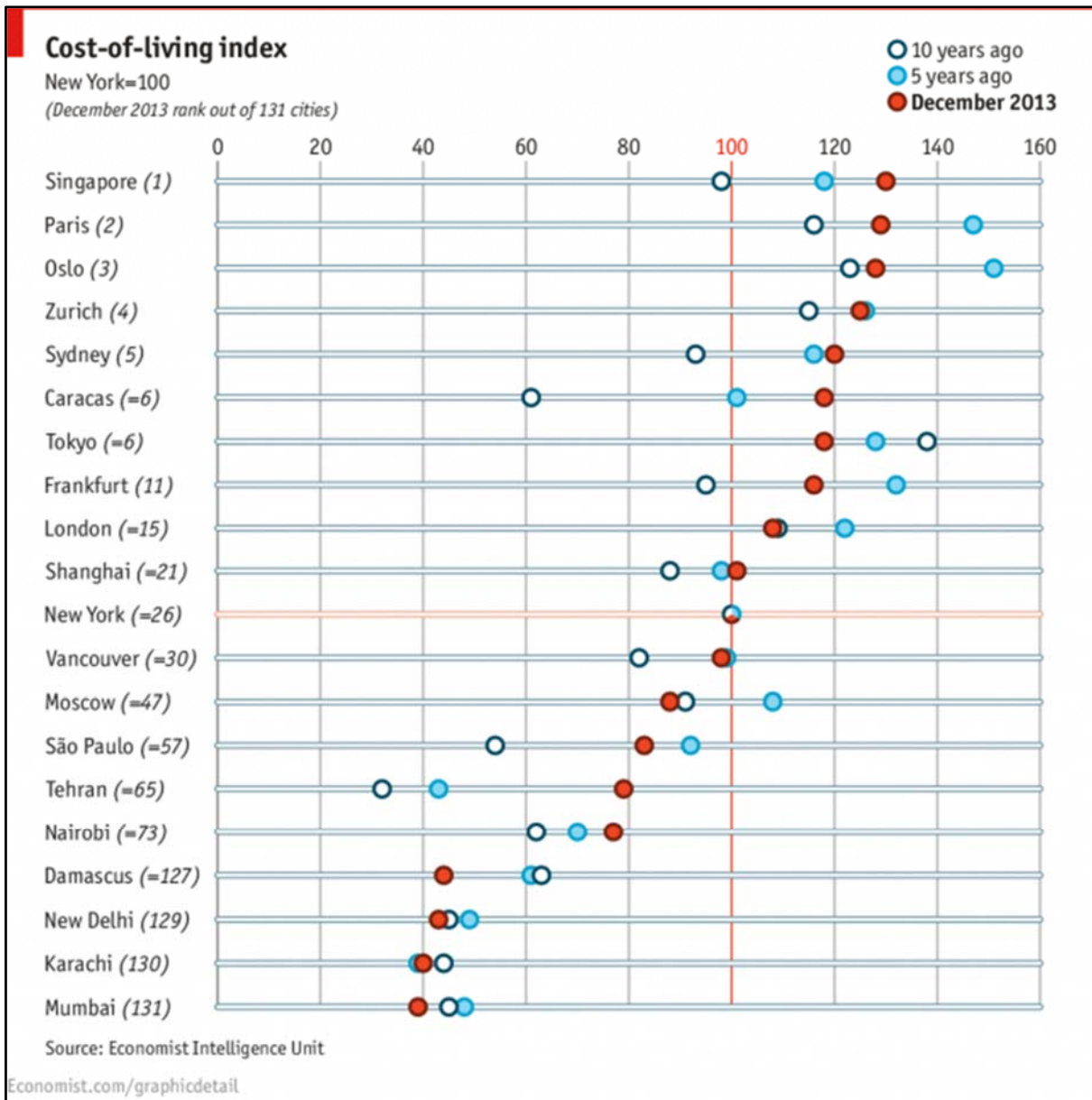
Data from the Union Ministry of Drinking Water and Sanitation (MODWS) suggests that 77 per cent of India's rural population had access to at least 40 Litres Per Capita Day (LPCD) of safe drinking water. Even so, India compares poorly with other countries in terms of the rural population able to access safe drinking water. The crisis is fuelled by over-exploitation of ground water. A ministry official informs that groundwater was the source of 85 per cent of the drinking water in rural India, the rest coming from surface water like rivers and streams.

India is the largest exploiter of groundwater in the world. It pulls out 251 cubic km of water every year, which is higher than that of the United States and China put together. Ground water levels in India are sinking faster than in most major countries. "The situation is already critical in 40 per cent of our water reserves. Going forward it will be tougher to meet water demands. If we are not doing anything to reduce our exploitation of groundwater, there will be water wars," says Kapil Narula, CEO & Executive Director, CII-Triveni Water Centre. Even where water is available, pollution is a major concern.

Source: <https://fluoridealert.org/news/cost-of-water-surges-as-a-business-booms/>

Resource 10 for Question 4

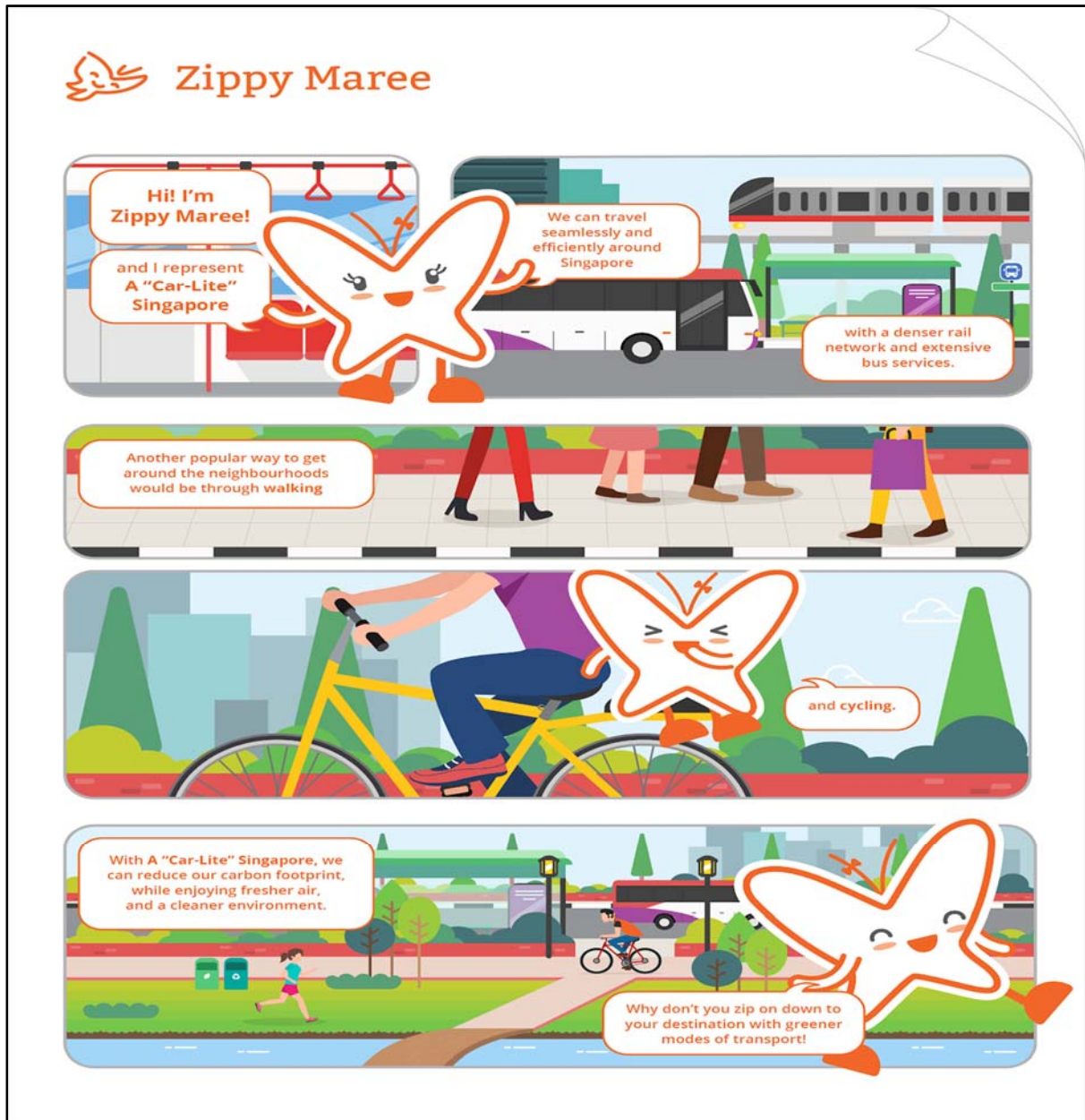
Cost of living index from 2003 to 2013



Source: <https://www.economist.com/graphic-detail/2014/03/04/of-price-and-place>

Resource 11 for Question 4

Poster of "Car-Lite" Singapore



Source: <https://www.mewr.gov.sg/ssb/about-ssb/zippy-maree>

Resource 12 for Question 4

Poster on recycling in National University of Singapore

ZeroWaste

NUS
FIGHTS
CLIMATE
CHANGE
Be the Change YOU want to see in the world.

Do you know, by recycling 50kg
of paper, you can save a 20 year old tree?

**Crush or Save...
You Decide**

Paper recycling bins
will be right outside
MPSH 5! Let's fight climate
change together, bring your
unwanted notes to recycle!

Supported by:
Office of Estate & Development
Office of Environmental Sustainability

NUS
National University
of Singapore

Source: <https://cpb-us-w2.wpmucdn.com/blog.nus.edu.sg/dist/e/185/files/2009/11/ZeroWaste-Exams-Sem1-Ay0910.jpg>

