



SERANGOON JUNIOR COLLEGE
JC2 PRELIMINARY EXAMINATIONS 2015
Higher 1

GEOGRAPHY

8812/01

Wednesday
19 Aug 2015
3 hours

Additional materials: Writing Paper
1 Insert

READ THESE INSTRUCTIONS FIRST

Write your name and civics group on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs, or rough working.
Do not use staples, paper clips, highlighter, glue or correction fluid.

Section A

Answer **all** questions.

Section B

Answer **one** question in this section.

Section C

Answer **one** question in this section.

The Insert contains all the Figures referred to in the question paper.
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 work securely together.
The number of marks is given in brackets [] at the end of each question or part question.

Section A

Answer **all** the questions in this section.
 Questions 1, 2 and 3 carry 12 marks. Question 4 carries 14 marks.
 You should allocate your time accordingly.

Lithospheric Processes, Hazards and Management

- 1 Fig. 1A shows a limestone feature in Florida (USA). The entire state of Florida is underlain by limestone. Fig. 1B illustrates how the limestone feature was formed.
- (a) Identify the limestone feature shown in Fig. 1A. [1]
 - (b) With reference to the Figs 1A and 1B, and your own knowledge, explain the factors contributing to the development of the limestone feature you have identified in (a). [5]
 - (c) Describe how the nature and form of a tower karst landscape differs from a limestone pavement. [6]

Globalisation of Economic Activity

- 2 Fig. 2 shows the actual and projected trends in Research and Development (R&D) spending in selected economies from 2000 onwards.
- (a) Define *research and development*. [2]
 - (b) Using Fig. 2, compare the changes in R&D spending between Asian and non-Asian economies. [5]
 - (c) Suggest how globalisation can lead to the rise of R&D activities in selected economies. [5]

Hydrologic Processes, Hazards and Management

- 3 **EITHER** Fig. 3 depicts the Hjulstrom diagram.
- (a) With reference to Fig. 3 :
 - (i) Identify the largest size of material that can be eroded at the velocity of 100cm/s. [1]
 - (ii) Describe what would happen to the material you have identified in (a) (i), when the velocity drops from 100cm/s to 10cm/s. [3]
 - (b) Suggest **one** reason why critical erosion velocity is represented by a band rather than a single line. [2]
 - (c) Explain the importance of critical erosion velocity in the transportation of the load within a river channel. [6]

Urban Issues and Challenges

3 OR Fig. 4 is a map of deprivation in the City of Newcastle upon Tyne in 2004.

Newcastle is a city on the north bank of the River Tyne in North East England. In 2004, Newcastle had a total population of 260 000. On the map, deprivation is expressed by an index. This index is calculated from variables including income, health and education levels.

- (a) Give one other variable which could have been used to indicate levels of deprivation. [1]
- (b) With reference to Fig. 4, describe the distribution of the most deprived districts (those with an index of deprivation of 56.3 or more). [3]
- (c) Suggest possible reasons for : [8]
 - (i) the location of the most deprived districts
 - (ii) the location of the least deprived districts such as Woolsington.

Lithospheric and Hydrologic Processes, Hazards and Management

4 EITHER Fig. 5A shows the tectonic plates and the epicentre of the 2011 Tohoku, Japan earthquake. Fig. 5B shows the effects of the tsunami on the Kitakami river. The Kitakami river is the largest river in the Tohoku region.

- (a) Using Fig. 5A, comment on the nature of the plate boundary and plate movement leading to the 2011 Tohoku earthquake. [1]
- (b) With reference to Fig. 5B, describe and explain the effects of the tsunami on Kitakami river. [3]
- (c) Suggest the effects of earthquakes on channel flow and morphology. [4]
- (d) Imagine that you are a government official working for the Japanese Seismic Research Center. Discuss how you would map an earthquake hazard map for Japan. [5]

Globalisation of Economic activity and Urban Issues and Challenges

4 OR Fig. 6 shows the ranking of cities based on the Guardian Cities Global Brand Survey, 2014.

- (a) With reference to Fig. 6, describe the relationship between “asset strength” and “buzz strength”. [4]
- (b) Using examples, explain specific strategies that Singapore has adopted in trying to improve its “Global Brand”. [6]
- (c) Discuss how you would map global variations in economic competitiveness. [4]

Section B

Answer **one** question from this section. Each question carries 25 marks.

Lithospheric Processes, Hazards and Management

5 EITHER

- (a) Describe the role of plate tectonics in the rock cycle. [9]
- (b) Compare the volcanic hazards at convergent and divergent plate boundaries. Discuss the challenges associated with managing these hazards at the different plate boundaries. [16]

5 OR

- (a) Compare the features, usefulness and limitations of Peltier's model and Strakhov's model. [9]
- (b) "A knowledge of deep weathered profiles enables us to understand the form and formation of granitic landforms." Discuss. [16]

Hydrologic Processes, Hazards and Management

6 EITHER

- (a) Explain the meaning of the terms: hydraulic radius, channel discharge and channel competence in relation to a river channel. [9]
- (b) Assess the extent to which an understanding of hydraulic radius leads to successful flood management strategies. [16]

6 OR

- (a) With the aid of a diagram, describe and explain how sub-surface flows and stores may contribute to surface flows and stores. [9]
- (b) With reference to one or more examples, discuss how humans influence storages within the drainage basin. [16]

Section C

Answer **one** question from this section. Each question carries 25 marks.

Globalisation of Economic activity

7 EITHER

- (a) With the help of examples, explain the concept of a *shrinking world*. [9]
- (b) Examine the role of the state in the **location** of economic development. [16]

7 OR

- (a) Explain the growth and role of *small medium enterprises (SMEs)* in the face of global economic change. [9]
- (b) Discuss the view that supranational bodies have benefited DCs at the expense of LDCs. [16]

Urban Issues and Challenges

8 EITHER

- (a) Give the meaning of the term *urbanisation* and discuss the relationship between *urbanisation* and *urban growth*. [9]
- (b) To what extent do you agree that primacy simply represents an early stage in a country's urban development? [16]

8 OR

- (a) With reference to examples, outline the problems cities face from increasing road traffic. [9]
- (b) "Although urban areas in DCs and LDCs differ in character, the housing problems they experience are the same." How far do you agree? [16]

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This insert contains all the Figures referred to in the question paper.

Fig. 1 for Question 1**Fig. 1A** Limestone feature in Florida (USA)

Source: Southwest Florida Water Management District

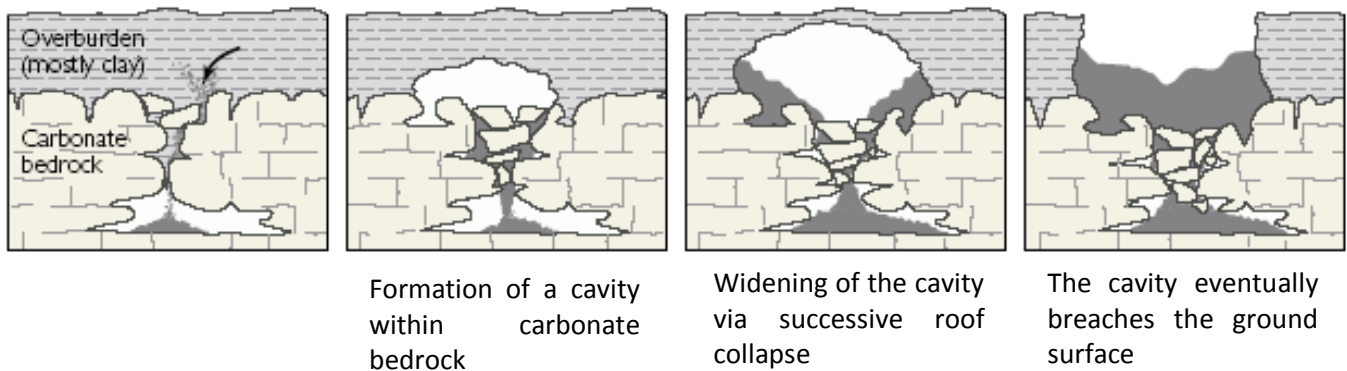
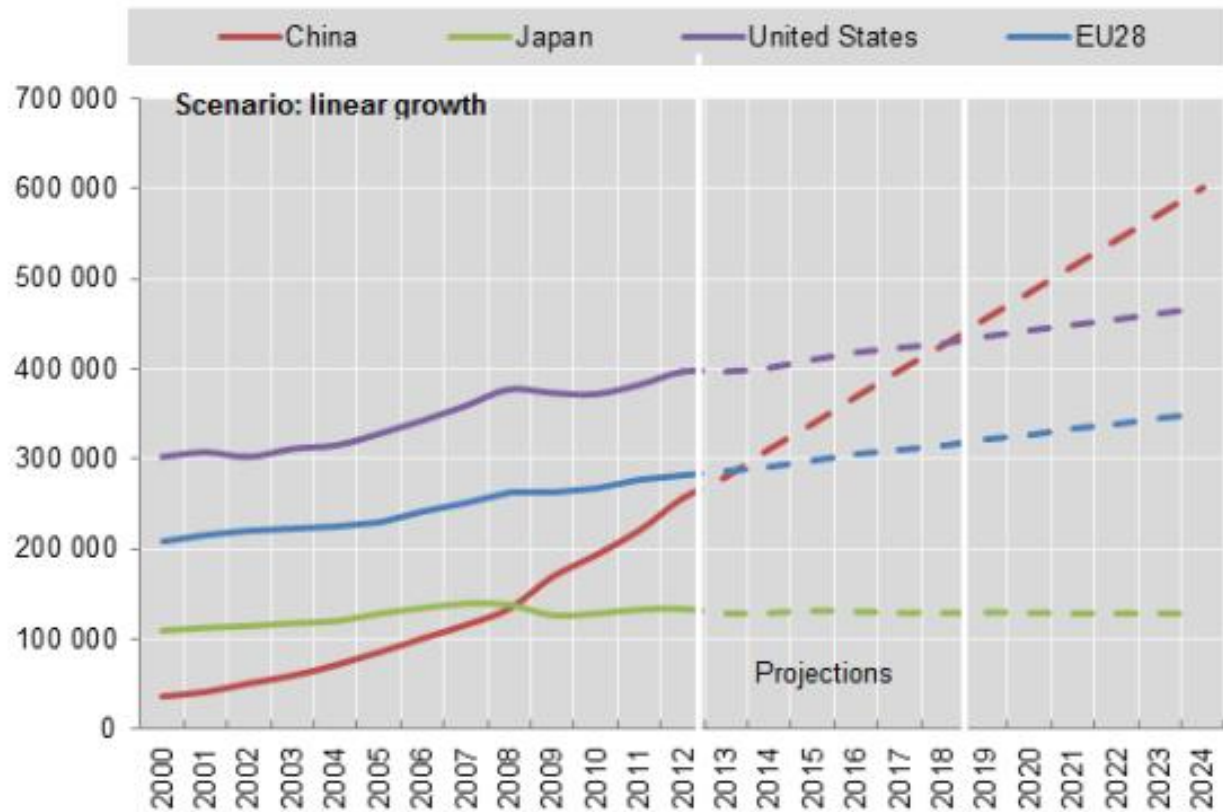
Fig. 1B Formation of the limestone feature

Fig. 2 for Question 2

Fig. 2 R&D Spending in selected economies, 2000-2012 and projections to 2024

Note : R&D spending refers to spending by governments and private businesses (local and foreign)



Source : OECD Science, Technology and Industry Outlook 2014

Fig. 3 for Question 3 Either

Fig. 3 Hjulstrom Diagram

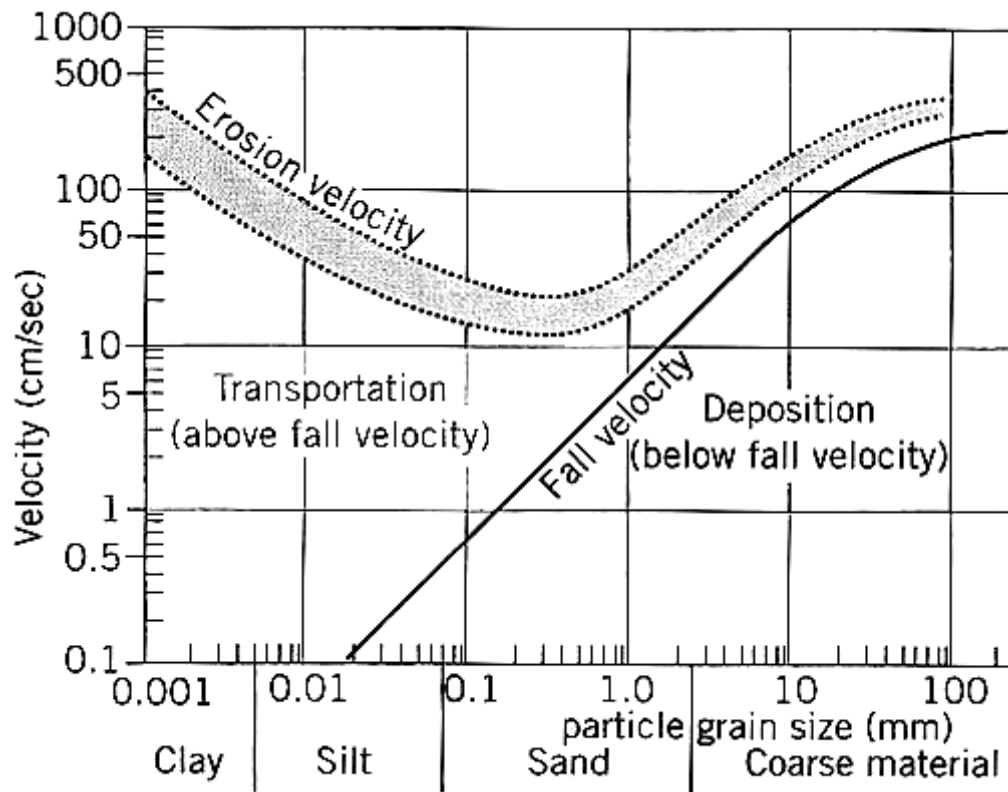
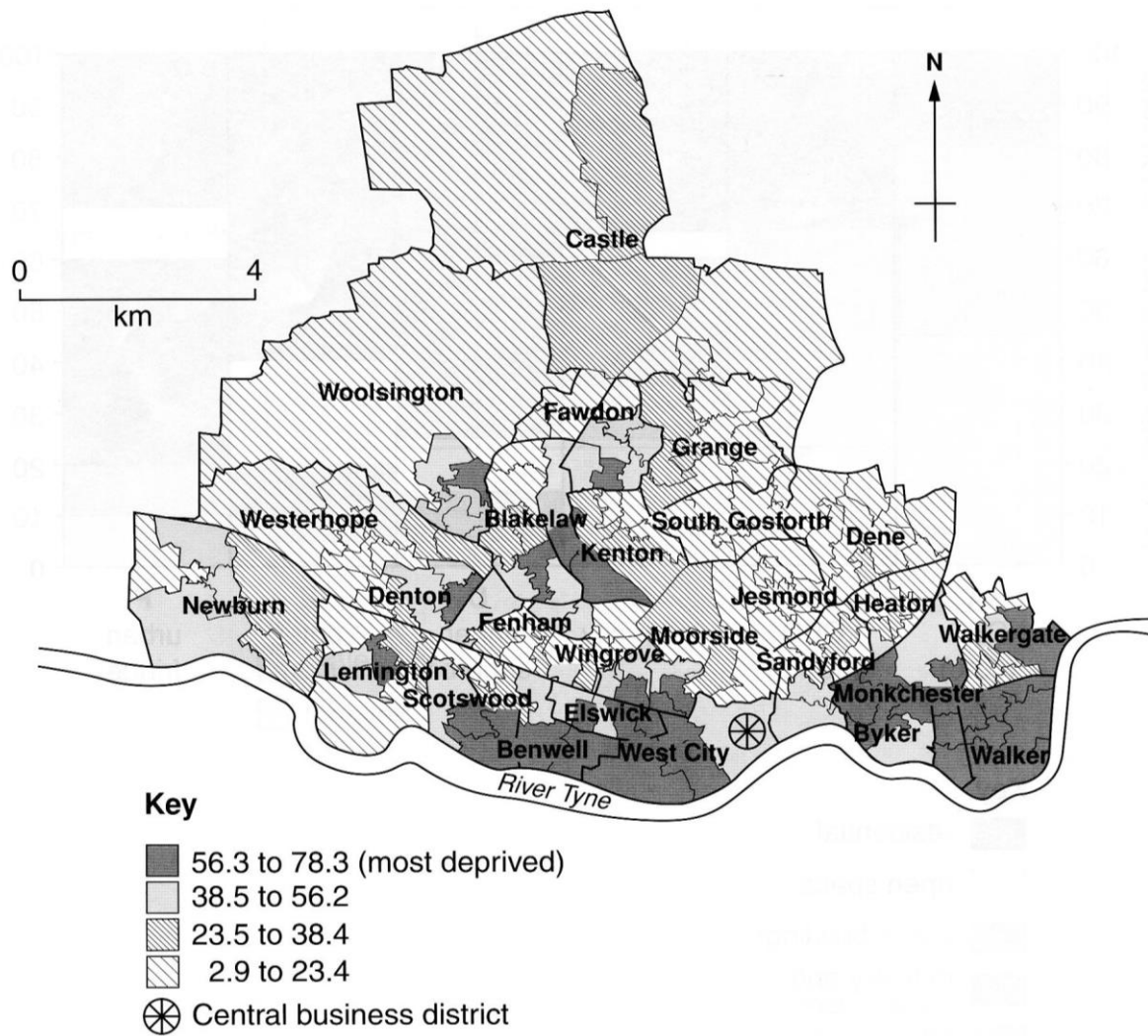


Fig. 4 for Question 3 Or

Fig. 4 The City of Newcastle upon Tyne of deprivation (2004)



Figs 5A and 5B for Question 4 Either

Fig 5A Tectonic plates and the epicentre of the 2011 Tohoku, Japan earthquake

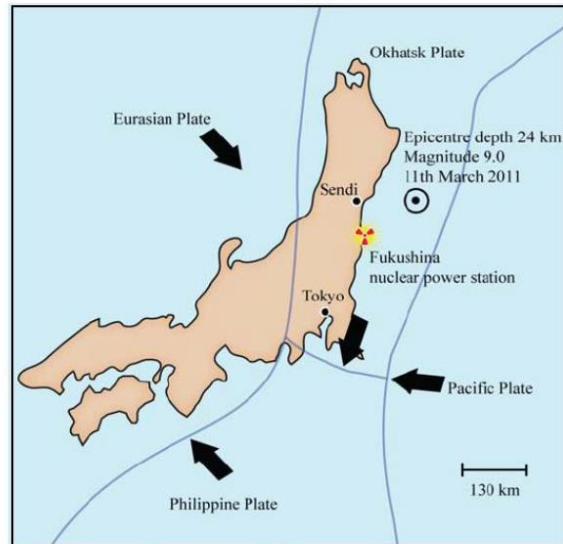
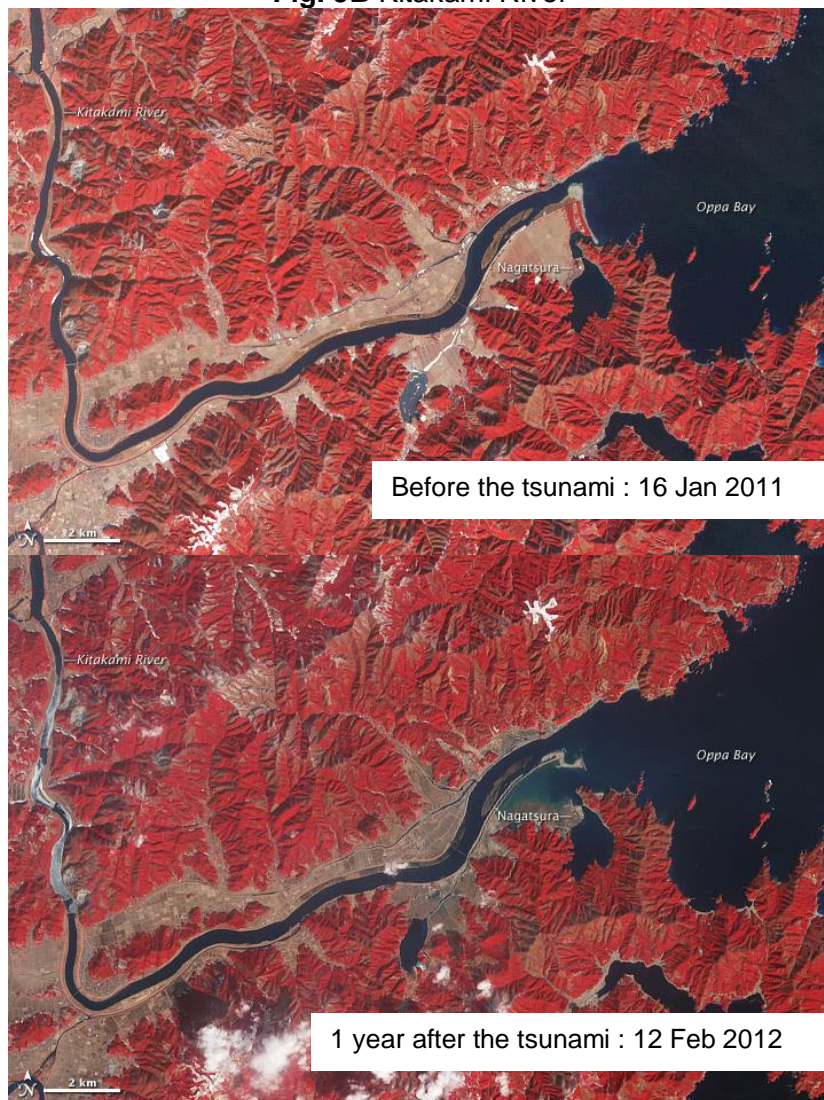


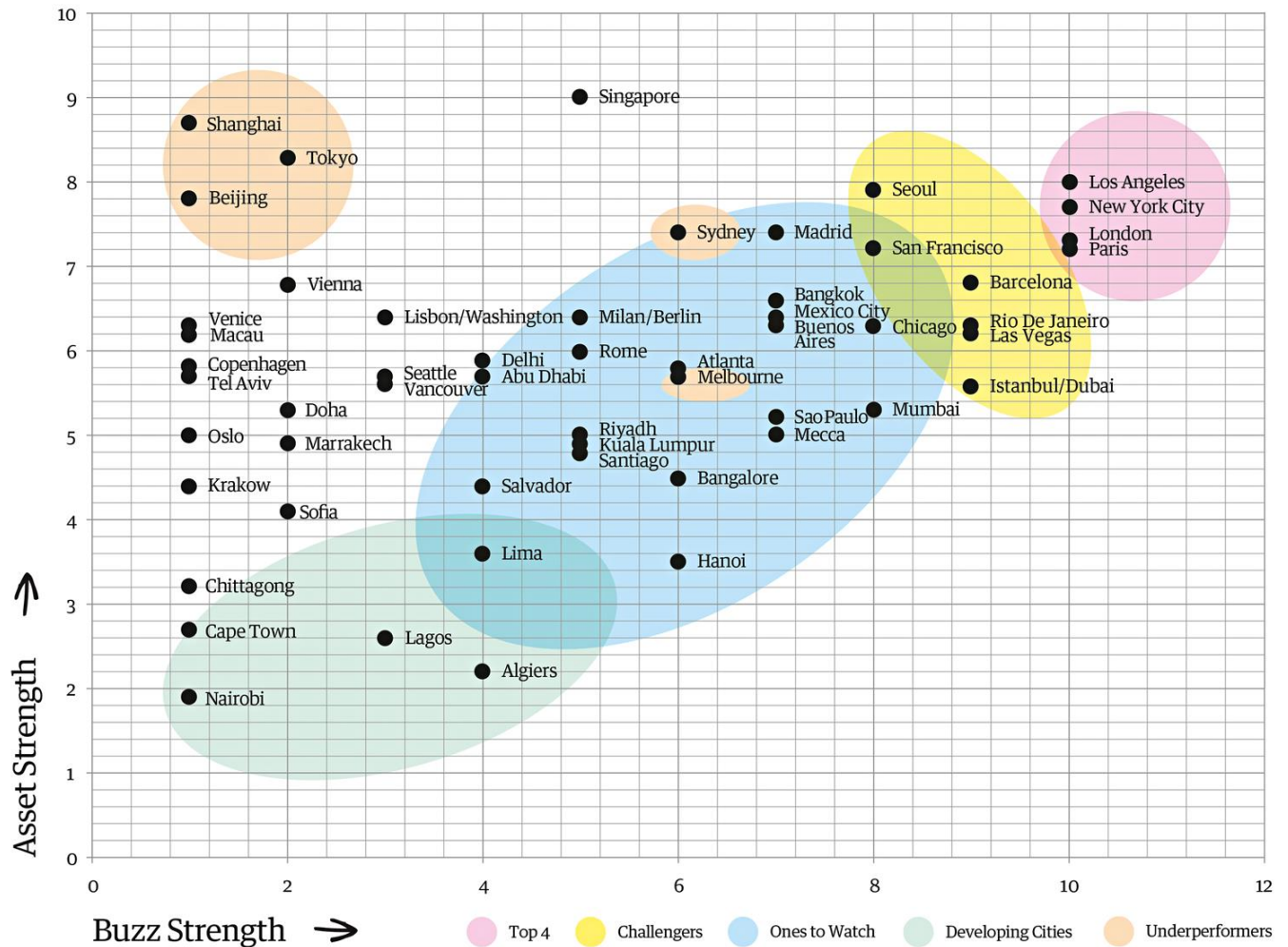
Fig. 5B Kitakami River



Source: <http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=77379>

Fig. 6 for Question 4 Or

Fig. 6 Guardian Cities Global Brand Survey, 2014



The report measures two aspects of a city's brand: its “assets” – attractions, climate, infrastructure (particularly transport), safety and economic prosperity – and its “buzz”, a combination of social media (Facebook likes and Twitter sentiment analysis) and media mentions. Assets and buzz were each graded out of 10; the numbers were added to produce a total score.

Source : <http://www.theguardian.com/cities/datablog/2014/may/06/world-cities-most-powerful-brands-get-the-data>

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