10th International Geography Olympiad

Kyoto, Japan

30 July – 5 August 2013

Written Response Test

Question and Answer Booklet

Do NOT open the Booklet before instructed to do so by a supervisor.

Name: ..... Team: .....

Student number: .....

Instructions for the Students

1. Fill in your name, team and iGeo student number on the front page of this Question and Answer Booklet.

2. Fill in your iGeo student number in the boxes on top of the pages in this Booklet.

3. This test consists of 6 Sections.

4. The maximum total mark is 90.
   The mark for each question is given at the beginning of the question.
   There are a maximum of 15 marks for each Section.

5. Answer all questions in the spaces provided in this Booklet.

6. Check the backs of pages as questions are printed on both sides of a page.

7. Give only the required number of answers (reasons, examples, etc.).
   For instance, if the question asks for 2 reasons and you give more than 2, only the first 2 reasons will be marked.

8. You must use the Diercke International Atlas during the test where referred to in the questions and at your convenience.

9. The Resource Booklet contains Sources referred to in the questions.

10. You may use a calculator during the test.

11. Time: 180 minutes for students not educated in English,
    150 minutes for students educated in English.

12. Students not educated in English are allowed to use bilingual dictionaries during the test.

Good luck!

Student number:

Section A: Tourism and Conservation

3m

1. Study the Diercke International Atlas (later on referred to as the Atlas) pages 196–197 map 1 "Tourism".
   Identify the 3 main areas of the world where tourism is important because of the relative number of visitors to the number of inhabitants according to the map key.
   Suggest reasons why these areas attract so many tourists.

   Area 1: ..... Reasons: .....

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   Area 2: ..... Reasons: .....

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   Area 3: ..... Reasons: .....

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4m

2. Study the Atlas pages 56–57 maps "Europe – Tourism", especially map 3 "Albir and Benidorm – Different types of tourism".
   Compare and contrast the tourist resorts of Albir and Benidorm.

   1: .....

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   2: .....

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   3: .....

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   4: .....

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3m

3. Describe the goals of ecotourism.

1: .....

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2: .....

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3: .....

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5m

4. To what extent are protected areas (e.g. national parks) effective in the conservation of natural environments?

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Student number:

Section B: Volcanoes and Tectonic Activity

3m 1. Study Resource Booklet Sources B1–B3 pictures of the volcanoes.
In the table below name the types of volcano in the 3 photographs and in a few words describe the tectonic conditions under which each volcano was formed, using the Atlas pages 174–175 map 1 "Plate tectonics, volcanism and earthquakes".

	Haleakalā	Merapi	Surtsey
Volcano type			
Tectonic conditions			

2m 2. Explain the difference in shape between the volcanoes of Haleakalā and Merapi.

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3m 3. Which of the 3 volcanoes in the pictures will probably pose the biggest threat to people and the environment in the near future? Give reasons for your choice.

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2m 4. Study Resource Booklet Source B4 picture of the volcano.
Describe the different phases of volcanic activity of the area in the photograph.

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2m 5. Outline 2 ways in which scientists try to forecast volcanic eruptions.

1: .....

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2: .....

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3m 6. Explain why some people live on the slopes of active volcanoes.

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Student number:

Section C: Managing Urban Areas

4m

1. Study the cartoon which makes a comment on the process of urban sprawl.
   Explain the causes and the consequences of urban sprawl.

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6m

2. Outline the effects of urban structure upon microclimate in the urban area.

Temperature	Wind	Humidity

5m

3. Identify and discuss 2 ways in which management practices could make urban areas more sustainable.

1: .....

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2: .....

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Student number:

Section D: World Energy Production

2m 1. Study Resource Booklet Source D1 the map showing world distribution of electricity produced from gas.
Describe the pattern of global electricity production from gas as shown on the map.

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2m 2. Why do shale rocks often contain gas deposits?

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2m 3. Study the textbox below on 'A New Resource'.
Why is the extraction of shale gas by fracking more difficult than conventional gas extraction?

A New Resource

The use of new technology has revealed that there are large reserves of natural gas in shale rocks. In the United States shale gas has become an increasingly important source of natural gas since the start of this century, and interest has spread to potential gas shales in the rest of the world. In 2000 shale gas provided only 1% of the natural gas production in the United States; by 2010 it was over 20%.

The conventional gas resources are much easier to extract compared to shale gas. The use of a new technique, called fracking, has increased the possibilities of shale gas exploitation. With the use of explosives, cracks are made in the shale at depths of up to 3 or 4 kilometres. Afterwards water, sand and chemicals are pumped into the boreholes. The sand fills the cracks and keeps them open. After the water is pumped away, gas will flow out of the shales. From one borehole gas can be extracted from the nearby shales. But the boreholes eventually have to be relocated to another area.

1: ……

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2: ……

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2m 4. Study Resource Booklet Source D2 the block diagram showing the fracking process.
Give 2 possible impacts on the environment of increasing shale gas extraction.

1: .....

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2: .....

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2m 5. Give 2 reasons why countries in South America, such as Venezuela and Brazil, might not have the exploitation of shale gas as a high priority.

1: .....

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2: .....

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2m 6. Give 2 reasons why some Western European countries are particularly interested in shale gas exploitation in addition to conventional energy production.

1: .....

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2: .....

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Student number:

3m

7. Discuss ways in which governments can reduce the amount of energy used in their countries.

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Student number:

Section E: Climate Change in Sudan

3m

1. Study the Atlas pages 176–177 map 4 “World climates – Effective classification according to A. Siegmund and P. Frankenberg”.
   Give 3 reasons for climatic differences between Juba (southern Sudan, now known as South Sudan) and Cuzco (Peru).

   1: .....

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   2: .....

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   3: .....

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3m

2. Study the Atlas pages 178–179 Map “The world – Ecozones/vegetation”.
   Explain how the different ecozones/vegetation types surrounding Juba and Cuzco are influenced by the climate.

   Juba: .....

   .....

   .....

   Cuzco: .....

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   .....

2m

3. Study Resource Booklet Source E1 graph showing climate aspects of southern Sudan.
The rise in average air temperature could be used to support the argument for global warming.
Suggest 2 reasons why people might oppose this view, using the graph.

1: .....

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2: .....

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2m

4. Study Resource Booklet Source E1 graph showing climate aspects of southern Sudan.
The decrease in evapotranspiration is greater than in rainfall.
Why in very warm regions can increasing air temperatures reduce evapotranspiration?

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3m

5. Predict the consequences for local farmers as a result of this climate change in southern Sudan.

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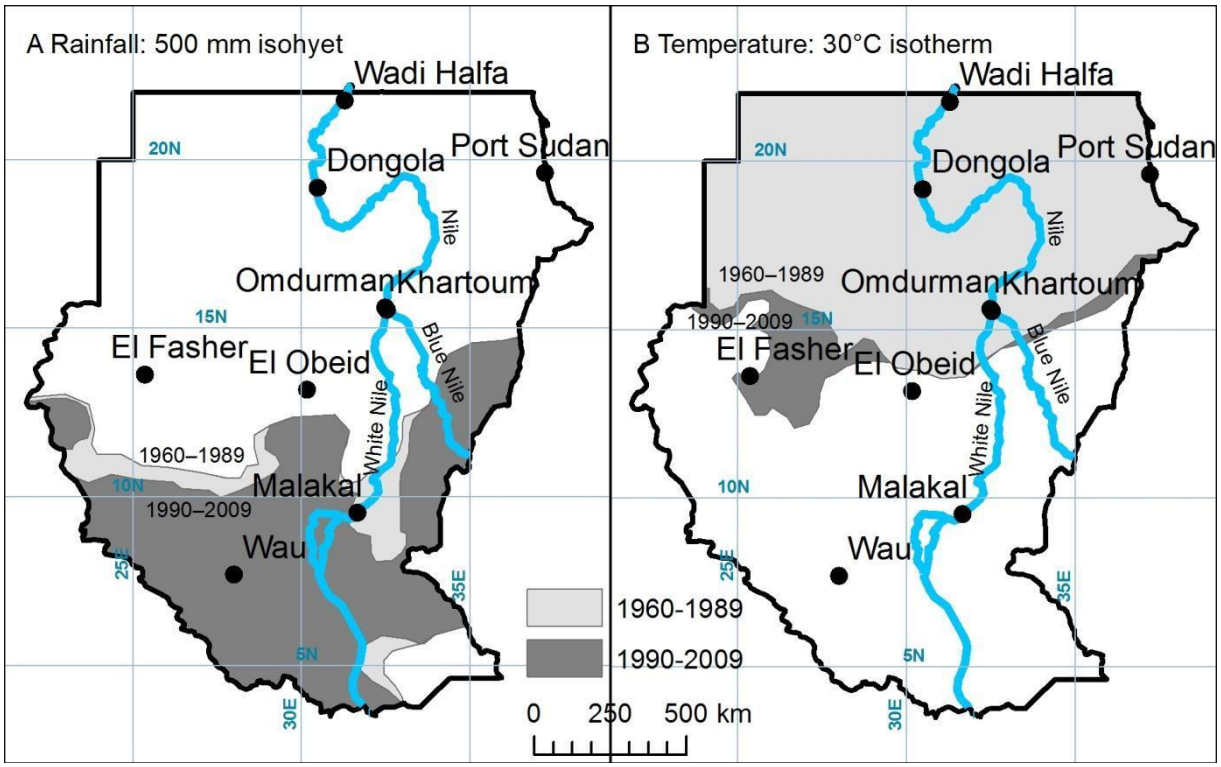
Student number:

2m

6. Study Resource Booklet Source E2 the climate change maps of Sudan.
   Using the black-and-white maps below:
   a) Sketch on Map A – your prediction for the location of the 500 mm rainfall isohyet for the period 2010–2039 if the trends continue.
   b) Sketch on Map B – your prediction for the location of the 30°C isotherm for the period 2010–2039 if the trends continue.

   Base your answer on prior knowledge and the Atlas pages 162–163 "Northern Africa – Physical map".



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Student number:

Section F: World Development

2m

1. Study Resource Booklet Sources F1 and F2 graphs.
   Compare the relationships between the indicators of development shown in the 2 graphs.

   Graph 1: .....

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   .....

   Graph 2: .....

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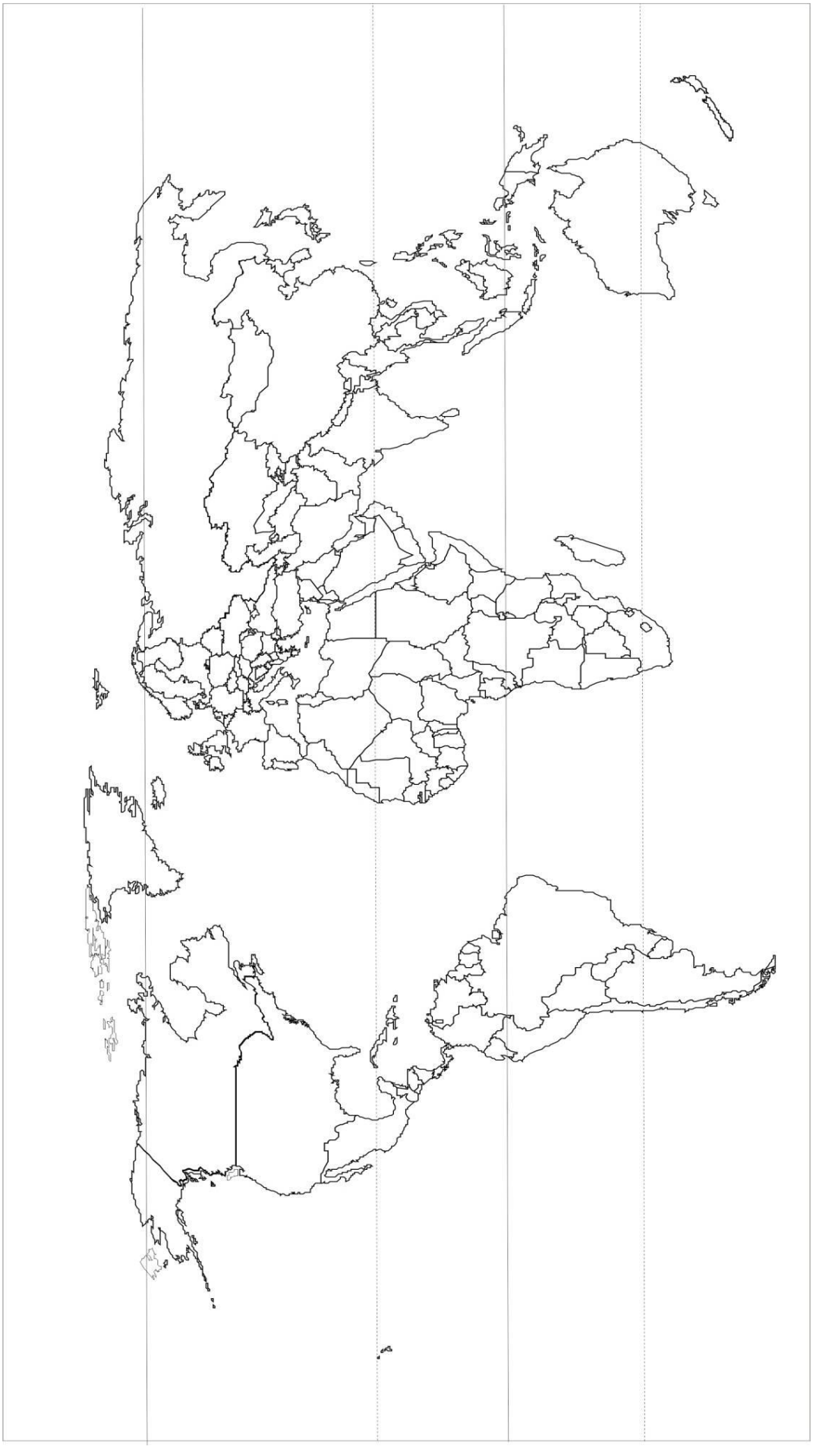
   .....

5m

2. Complete the table below to make a ranking of development based on the 6 different indices for the 16 selected countries. Each of the indices has been ranked using the 5 divisions of the key shown below the maps. The rankings for Life expectancy, Infant mortality, Food supply, Availability of drinking water and Gender-related illiteracy have been completed for you.
    a) Complete the ranking for Literacy using the key to the Atlas page 193 map 4 “Literacy”.
    b) Sum the ranks for each country.
    c) Using the sum of rankings column create 4 categories of development and use this to complete the map to show the variation in stages of development of the 16 countries.

	Life expectancy	Infant mortality	Food supply	Availability of drinking water	Literacy	Gender-related illiteracy	Sum of rankings	Categories of development (map key)
Argentina	4	3	5	5		2		
Bolivia	3	2	3	3		1		
Brazil	4	3	4	3		3		
Canada	5	4	5	5		3		
Egypt	4	3	5	4		1		
France	5	4	5	5		3		
India	3	2	3	3		3		
Iran	4	3	5	4		1		
Laos	3	2	3	2		1		
Mali	2	1	2	1		1		
Nepal	3	2	3	3		1		
Norway	4	4	5	5		2		
Uganda	1	2	2	4		1		
Ukraine	3	3	5	5		3		
South Africa	2	2	5	3		1		
Spain	5	4	5	5		3		

Student number:



4m

3. Complete the table below by suggesting a reason for how each of the following factors:
   a) Dependency and a colonial past and
   b) World trade and globalisation

   has contributed to those countries with the highest levels of development and those with the lowest levels of development.

	Dependency and colonial past	World trade and globalisation
Countries with the highest levels of development		
Countries with the lowest levels of development		

4m

4. Discuss the causes and the consequences of development gaps within countries. Illustrate your answer with examples.

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end ■

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Written Response Test

Resource Booklet

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Your answers will NOT be marked if you write them in this Resource Booklet.

Section B: Volcanoes and Tectonic Activity

Source B1: Haleakalā (the mountain in the background of the picture) in Maui in Hawaii.
http://weetlogs.scilogs.be

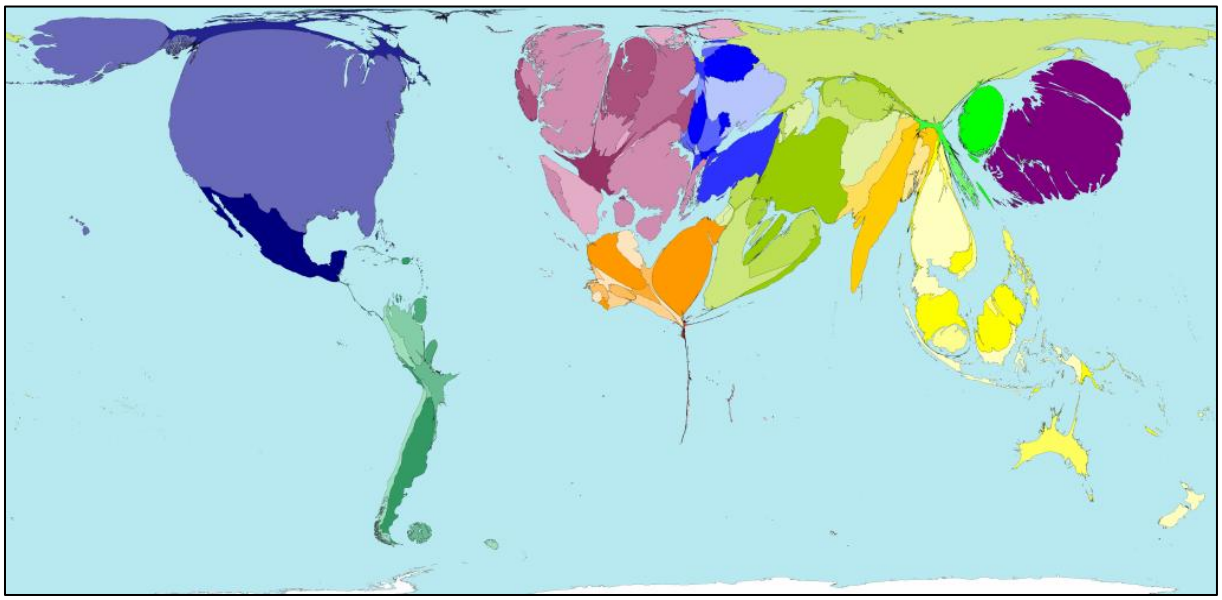
Source B2: Merapi in Java in Indonesia.
http://www.vulkanisme.nl/mount-merapi.php

Source B3: Surtsey, south of Iceland in the Atlantic Ocean.
http://peripluscd.files.wordpress.com/2013/03/volcano.jpeg

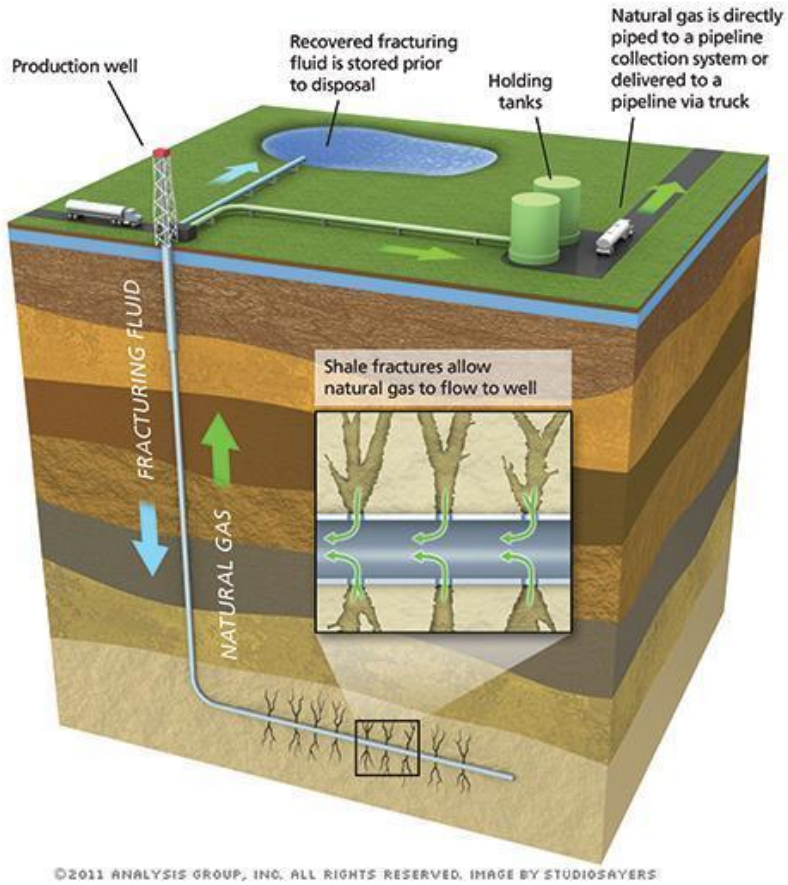
Source B4: Photograph of an active volcanic area.

Section D: World Energy Production

Source D1: This map shows the distribution of electricity produced by gas across the world. Territory size is proportional to the percentage of electricity generated from gas that occurs there.
http://worldmapper.org/display.php?selected=112

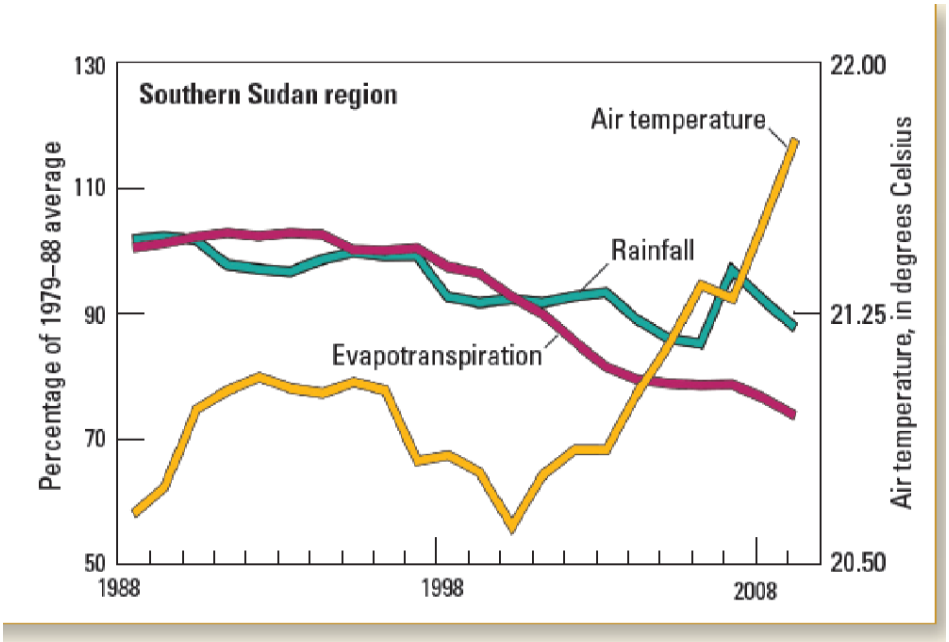


Source D2: Extraction of shale gas by fracking at great depth and high pressure.

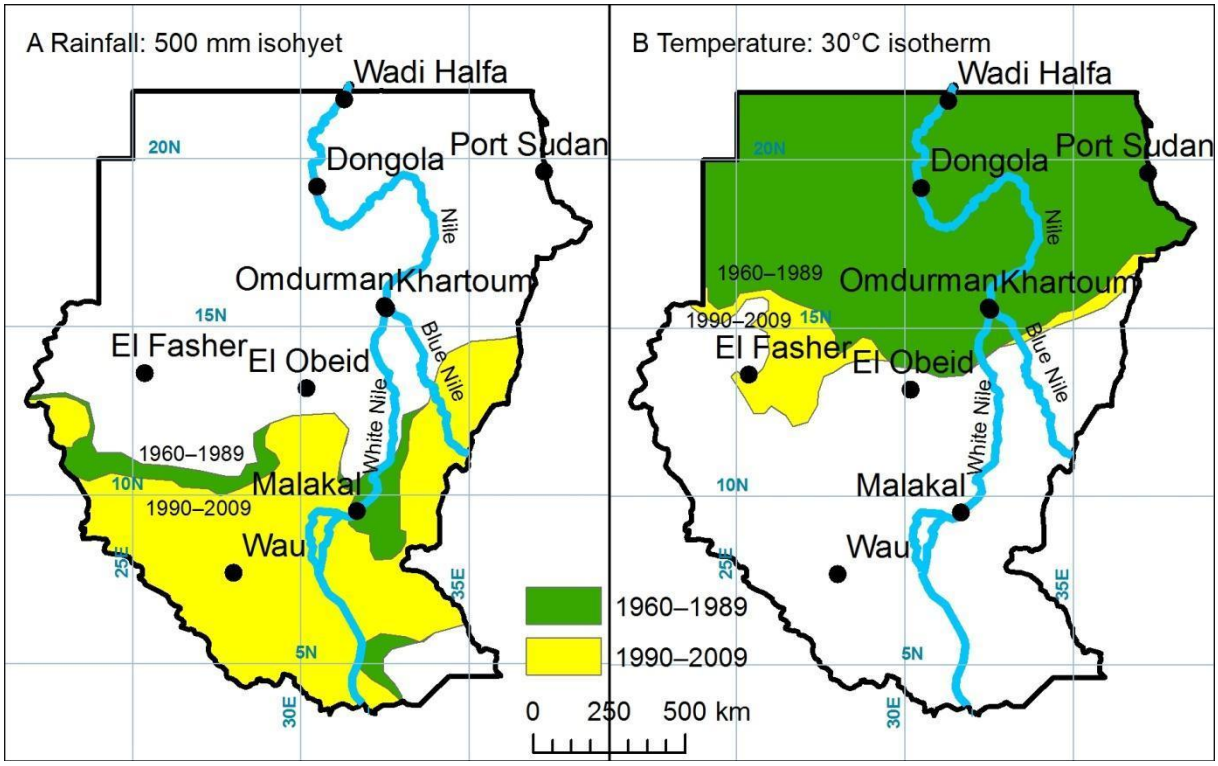


Section E: Climate Change in Sudan

Source E1: Rainfall, average air temperature, and actual evapotranspiration for the southern Sudan region.
http://pubs.usgs.gov/fs/2011/3072/pdf/FS2011-3072.pdf

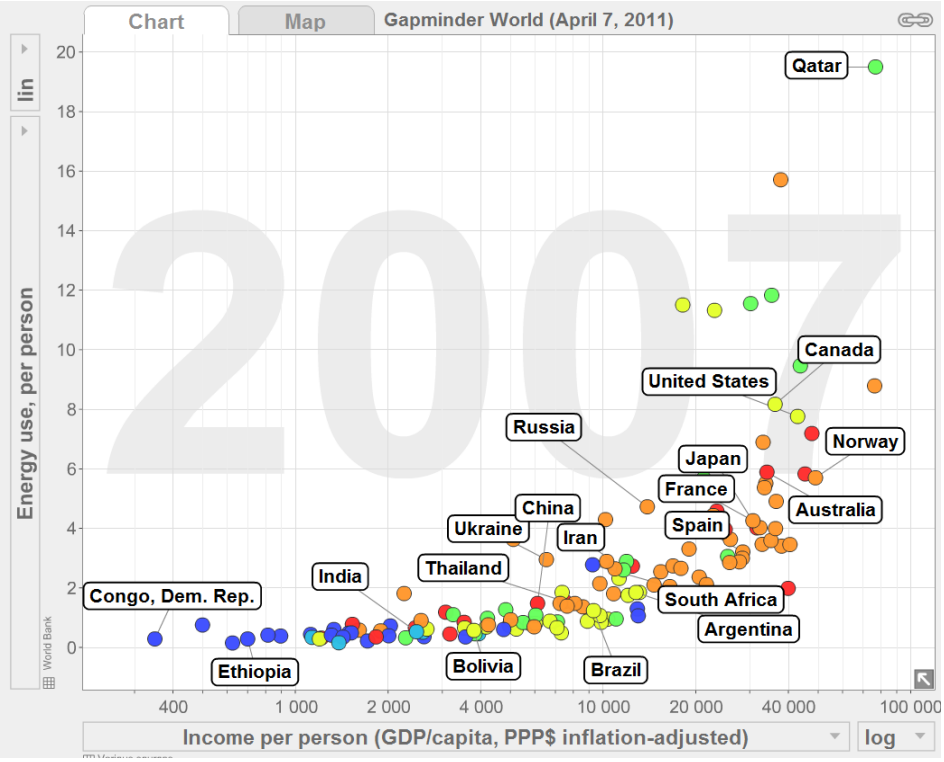


Source E2A (left) demonstrates the shifting of average location of the 500 mm rainfall isohyets from the period 1960–1989 until 1990–2009.
Source E2B (right) demonstrates the shifting of average location of the 30°C isotherms for the same periods.
http://pubs.usgs.gov/fs/2011/3072/pdf/FS2011-3072.pdf



Section F: World Development

Source F1: Income per person compared to energy use per person.
gapminder.org



Source F2: Medical doctors compared to child mortality.
gapminder.org