14th International Geography Olympiad

Belgrade, Serbia

2–8 August 2017

WRITTEN RESPONSE TEST

Question and Answer Booklet

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

Student number

1	4				

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

Instructions for 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 in the margin at the beginning of the question.
   There is a maximum of 15 marks for each Section.

5. Answer all questions in the spaces provided in this Booklet in English.
   Keep the left margin free for markers.
   Please write clearly.
   Please use blue (or black) pen, not pencil.

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

7. There are blank pages which you can use as additional space for your notes.
   Please cross through any notes so that we know they are not part of your answers.
   If you use these pages for answers, please label them clearly with the Section and question number (e.g. A1).

8. Where appropriate, please write sentences or phrases not single words.

9. 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.

10. The Resource Booklet contains Figures referred to in this Booklet.
    Do not write any of your answers in Resource Booklet.

11. You may use a calculator during the test.

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

13. Time:
    180 minutes for students not educated in English (+10 minutes reading time),
    150 minutes for students educated in English (+10 minutes reading time).

Good luck!

Written Response Test
Contributions from: Australia, Germany, Indonesia, Japan, Mongolia, New Zealand, Switzerland, Taiwan/China–Taipei and UK
Committee Convenor: Dubravka Spevec (Croatia)
Deputy: Anu Printsmann (Estonia)
Editors: Shu Min (Celestine) Hang (Singapore) and Jacqueline Louise Richards (New Zealand)
Reviewers: Kath Berg (Australia) and Mark Higginbottom (UK)
Director of Tests: Susan Lomas (UK)

Student number: 14

Section A: Geography of Sport

2 m

1. After the 1992 Rio de Janeiro's Earth Summit 'a responsible concern for environmental issues' was added to the Olympic Charter.
   Identify 4 ways that sporting mega-events can promote environmental **sustainability**.

   Way 1: .....

   .....

   Way 2: .....

   .....

   Way 3: .....

   .....

   Way 4: .....

   .....

3 m

2. Study Resource Booklet Figure A1: Location of Olympic zones for Summer Olympics in 2016 in Rio de Janeiro.
   With the help of the information provided suggest 3 challenges faced in developing the Olympic zones in Rio de Janeiro.

   Challenge 1: .....

   .....

   .....

   Challenge 2: .....

   .....

   .....

   Challenge 3: .....

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This Section continues on the next page.

4 m

3. Olympic Games are followed by the Paralympic Games – a major international multi-sport event involving athletes with a range of disabilities.
Outline 2 changes the **Paralympic** Games have brought about in society.

Change 1: .....

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Change 2: .....

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2 m

4. Study Resource Booklet Figure A2: Time series of sport-related costs for Olympics 1960–2016.
Describe 2 **main** trends in the cost of hosting the Olympic Games.

Trend 1: .....

.....

Trend 2: .....

.....

4 m

5. Mark with an 'X' on the continuum below to show how far you agree or disagree with the following statement:
"The positive impacts of sporting mega-events often exceed the negative impacts".

Strongly agree — Strongly disagree

With the help of the information already provided justify your response.

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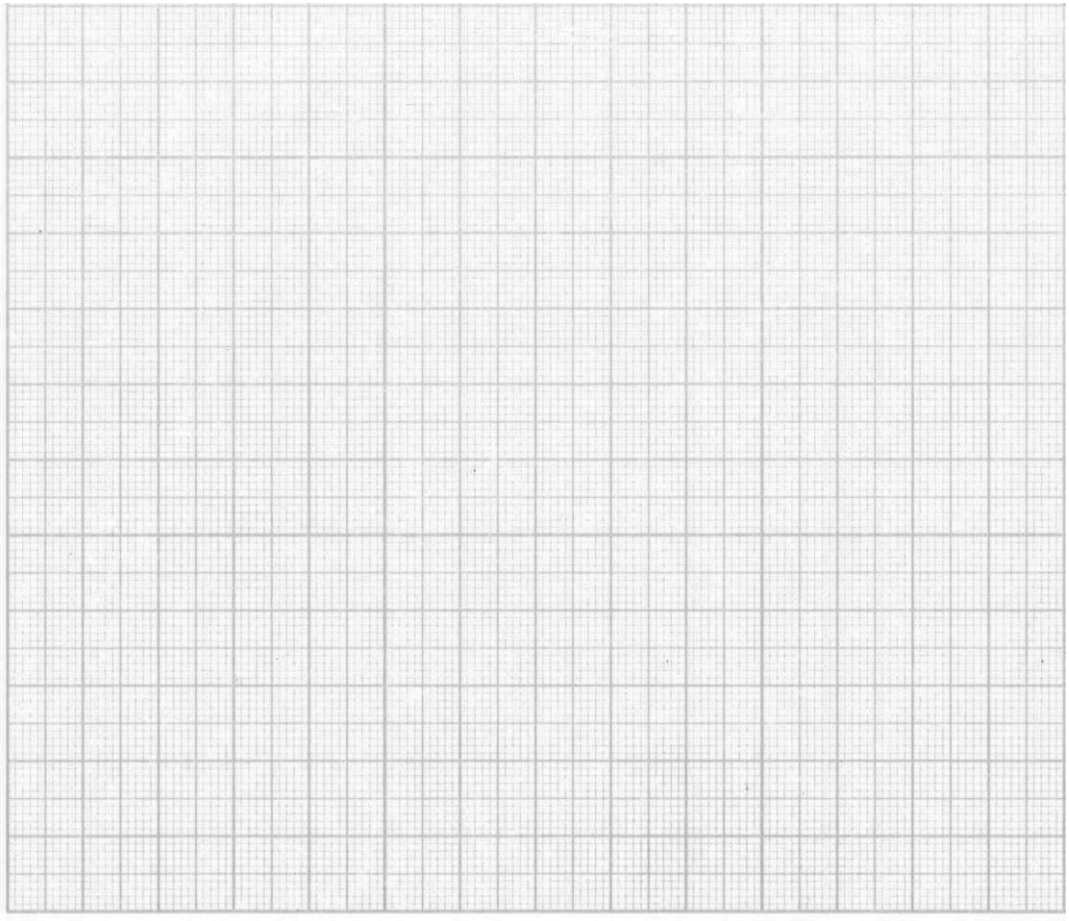
Student number: 14

Section B: Climate and Weather

4.5 m

1. Study Resource Booklet Table B1: The climate data for Addis Ababa, Ethiopia.
   Draw a climate graph based on the data from the Table B1.



2.5 m

2. Study Resource Booklet Table B1: The climate data for Addis Ababa, Ethiopia and your climate graph for Addis Ababa, Ethiopia above.
   Identify the wet (rainy) season and explain the main factors causing the rain in this season.

   Wet season: .....

   Explanation: .....

   .....

   .....

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   .....

3 m

3. Study Resource Booklet Table B1: The climate data for Addis Ababa, Ethiopia and your climate graph for Addis Ababa, Ethiopia above.
Suggest 3 reasons for the **monthly average temperature pattern** (over a year) in Addis Ababa, Ethiopia.

Reason 1: .....

.....

Reason 2: .....

.....

Reason 3: .....

.....

2 m

4. Study Resource Booklet Figure B2: Surface pressure maps of 9–10 December 2014.
Explain the **distribution** of air pressure in the Northern Atlantic and over the European continent on 9–10 December 2014.

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3 m

5. Study Resource Booklet Figure B2: Surface pressure maps of 9–10 December 2014.
Based on the observed movement of fronts, forecast the weather for 3 regions in Europe in the following 24 hours (11 December 2014).

Region 1: .....

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Region 2: .....

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Region 3: .....

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Student number: 14

Section C: Transportation and its Environmental Impact

3 m

1. Study Resource Booklet Figure C1: The dominant road networks, shipping lanes and airline routes around the world.
   Describe the spatial pattern on a **global** scale of:

   Road networks: .....

   .....

   .....

   Shipping lanes: .....

   .....

   .....

   Airline routes: .....

   .....

   .....

4 m

2. Study Resource Booklet Figure C1: The dominant road networks, shipping lanes and airline routes around the world.
   Suggest 4 reasons for the pattern of transport routes.

   Reason 1: .....

   .....

   .....

   Reason 2: .....

   .....

   .....

   Reason 3: .....

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   Reason 4: .....

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4 m

3. Study Resource Booklet Figure C2: The rail network in South Africa and the 2 Tables below.
With the help of the information provided suggest 4 reasons for the **proportion** of freight (cargo) transport modes.

Table: The freight (cargo) transport in South Africa (2012).

Corridor	**Road** (Mtons)	**Rail** (Mtons)
Pretoria / Johannesburg – Durban	46.8	6.4
Pretoria / Johannesburg – Cape Town	34.2	1.7
Durban – Cape Town	9.0	< 0.1
Durban – East London	8.8	< 0.1
Pretoria / Johannesburg – Port Elizabeth	5.7	0.3
Other corridors	79.4	27.1
Metropolitan areas	124.1	5.8
Rural areas	255.0	39.0
Total	**563.1**	**80.3**

Adapted from https://www.environment.gov.za/sites/default/files/docs/publications/freightshift_roadtorail.pdf

Table: The annual costs of road and rail freight (cargo) transport in South Africa (2014).

	Road (Rand, billion)	**Rail** (Rand, billion)
Vehicle capital cost	25	2.0
Infrastructure capital cost	7.0	4.0
Vehicle operating cost	422	47
Infrastructure operating cost	2.0	

https://www.environment.gov.za/sites/default/files/docs/publications/freightshift_roadtorail.pdf

Reason 1: .....

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Reason 2: .....

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Reason 3: .....

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Reason 4: .....

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Student number: 14

4 m

4. Discuss the environmental impact of building railways.

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(you can use it for your notes (please cross them through afterwards) or
for answers, which are clearly labelled with the Section and question number).

Student number: 14

Section D: Tides

2 m

1. Identify 4 factors **causing** and/or **influencing** tides.

   Factor 1: .....

   Factor 2: .....

   Factor 3: .....

   Factor 4: .....

5 m

2. Draw an annotated diagram(s) to explain how **2 very high tides** occur **twice during a day (24 hours)** when there is a **full moon**.

This Section continues on the next page.

4 m

3. Study Resource Booklet Figures D1–D3: Photos and satellite imagery of Mont Saint-Michel, France.
Read the textbox below.
With the help of the information provided, suggest 4 reasons **why massive landscape-changing projects were started** at Mont Saint-Michel in 2006.

Textbox

Mont Saint-Michel is a famous tourist destination in France, and is world heritage listed. It is an island located about 1 km off the country's north-western coast, at the mouth of the Couesnon River, which has been canalized. The area has a high tidal range, at approximately 14 m between high and low water marks. Mont Saint-Michel was previously connected to the mainland by a tidal causeway (a path uncovered only at low tide). This was converted into a raised, permanently dry, causeway in 1879. Coastal flats on the adjacent mainland have been reclaimed (made into polders) creating pastureland in addition to occasional flood-induced salt marsh meadows used for grazing. In 2006 a €164 million project was announced to build a hydraulic dam using the waters of the Couesnon River. Another €209 million project included the removal of the causeway and visitor car park, replacing it with a new bridge.

Adapted from https://en.wikipedia.org/wiki/Mont_Saint-Michel

Reason 1: .....

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Reason 2: .....

.....

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Reason 3: .....

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Reason 4: .....

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This Section continues on the next page.

Student number: 14

4 m

4. Study Resource Booklet Figure D4: Artistic impression of a future tidal lagoon power plant, where an artificial lagoon is created within seawalls.
Suggest one Strength, one Weakness, one Opportunity, and one Threat (SWOT analysis) for any new tidal power plants that could be constructed across the world, besides energy production.

Strength:	Weakness:
Opportunity:	Threat:

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(you can use it for your notes (please cross them through afterwards) or
for answers, which are clearly labelled with the Section and question number).

Student number: 14

Section E: Soil Degradation

3 m

1. Describe 3 functions of soil.

Function 1: .....

.....

Function 2: .....

.....

Function 3: .....

.....

2 m

2. Identify 4 **natural** causes of soil degradation.

Natural cause 1: .....

.....

Natural cause 2: .....

.....

Natural cause 3: .....

.....

Natural cause 4: .....

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2 m

3. Identify 4 indicators that signify soil degradation resulting from **human actions**.

Indicator 1: .....

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Indicator 2: .....

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Indicator 3: .....

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Indicator 4: .....

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4 m

4. Study Resource Booklet Figures E1 and E2: Photos of examples of soil degradation. Name and explain the soil degradation processes.

Figure E1 process: .....

Explanation: .....

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.....

Figure E2 process: .....

Explanation: .....

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4 m

5. Study Resource Booklet Figures E1 and E2: The photos of the examples of soil degradation. Outline measures that could **reduce the severity** of both types of soil degradation.

Measures for figure E1: .....

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Measures for figure E2: .....

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Student number: 14

Section F: Food Security

2 m

1. Study Resource Booklet Figure F1: The trajectory of undernourishment in developing regions: actual and projected progress towards the World Food Summit (WFS) and Millennium Development Goal (MDG) targets.
   Describe the **progress made** in achieving the World Food Summit (WFS) and the Millennium Development Goal (MDG) targets.

   World Food Summit (WFS): .....

   .....

   .....

   Millennium Development Goal (MDG): .....

   .....

   .....

1 m

2. Study Resource Booklet Figure F1: The trajectory of undernourishment in developing regions: actual and projected progress towards the World Food Summit (WFS) and Millennium Development Goal (MDG) targets.
   Suggest the main reason why there was a **difference** in meeting the 2 targets.

   .....

   .....

4 m

3. Study Resource Booklet Figure F2: Nine influences on food security.
   Select 2 of the categories in the following list (Environmental, Political, Social/Cultural and Economic) and with the help of the information provided explain how factors in each category contribute to the causes of **food insecurity**.

   Category 1: .....

   Explanation: .....

   .....

   .....

   .....

   Category 2: .....

   Explanation: .....

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4 m

4. Outline 2 strategies to eliminate hunger.

Strategy 1: .....

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Strategy 2: .....

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4 m

5. Discuss why food waste is high in developed countries.

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end ■

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WRITTEN RESPONSE TEST

Resource Booklet

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

Do NOT write any of your answers in this Booklet.

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Written Response Test
Contributions from: Australia, Germany, Indonesia, Japan, Mongolia, New Zealand, Switzerland, Taiwan/China–Taipei and UK
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Director of Tests: Susan Lomas (UK)

Section A: Geography of Sport

Figure A1: Location of Olympic zones for Summer Olympics in 2016 in Rio de Janeiro (https://www.graphicnews.com/en/pages/34531/RIO-2016-Violent-deaths-in-Rio-de-Janeiro).

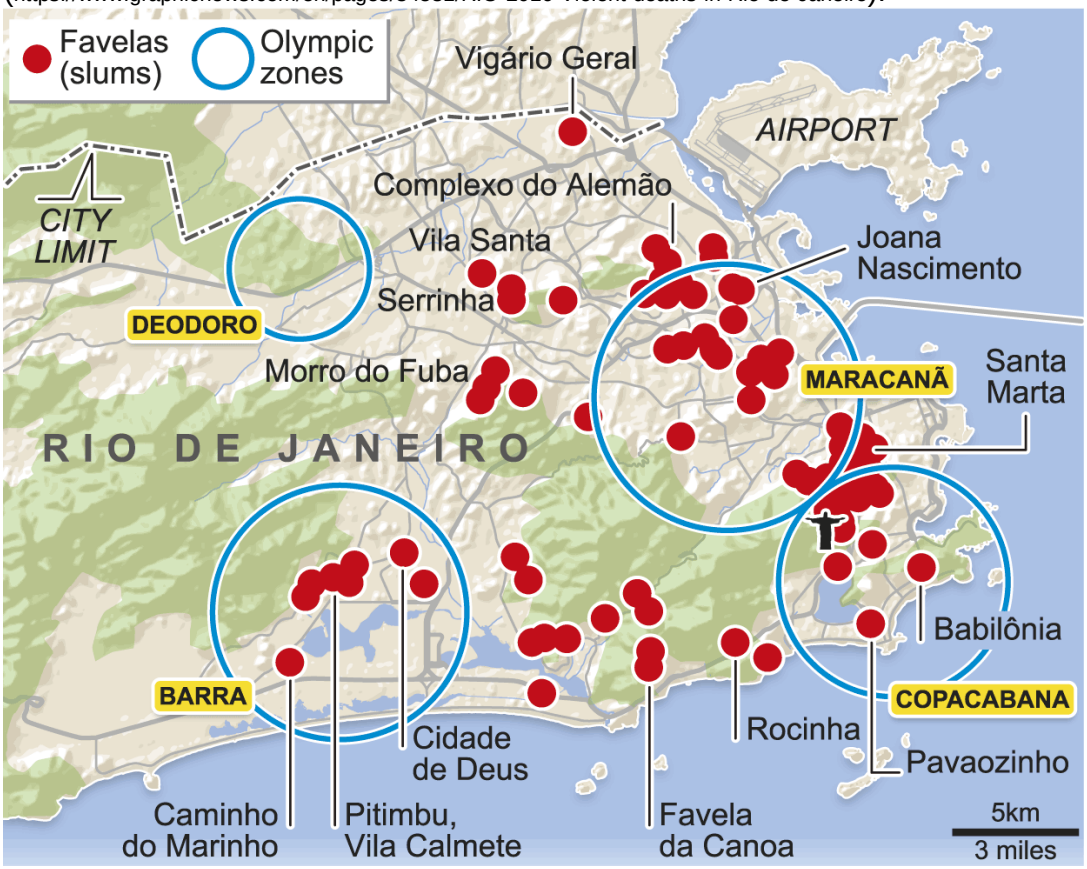
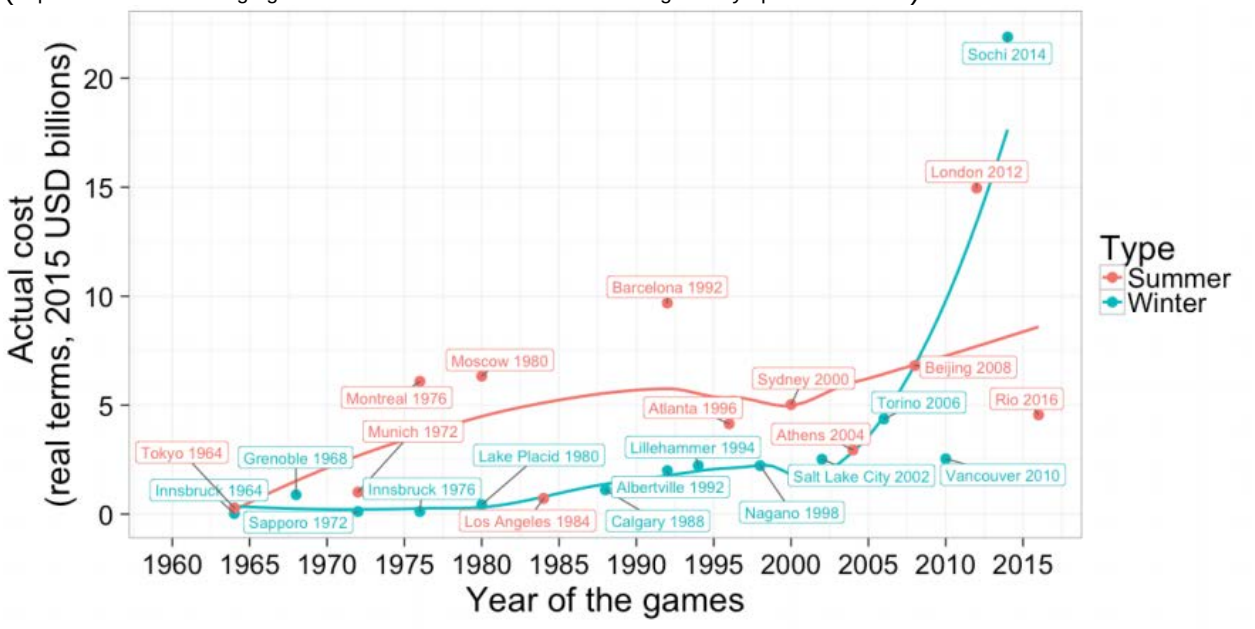


Figure A2: Time series of sport-related costs for Olympics 1960–2016 (https://www.weforum.org/agenda/2016/07/the-cost-to-cities-of-hosting-the-olympics-since-1964).

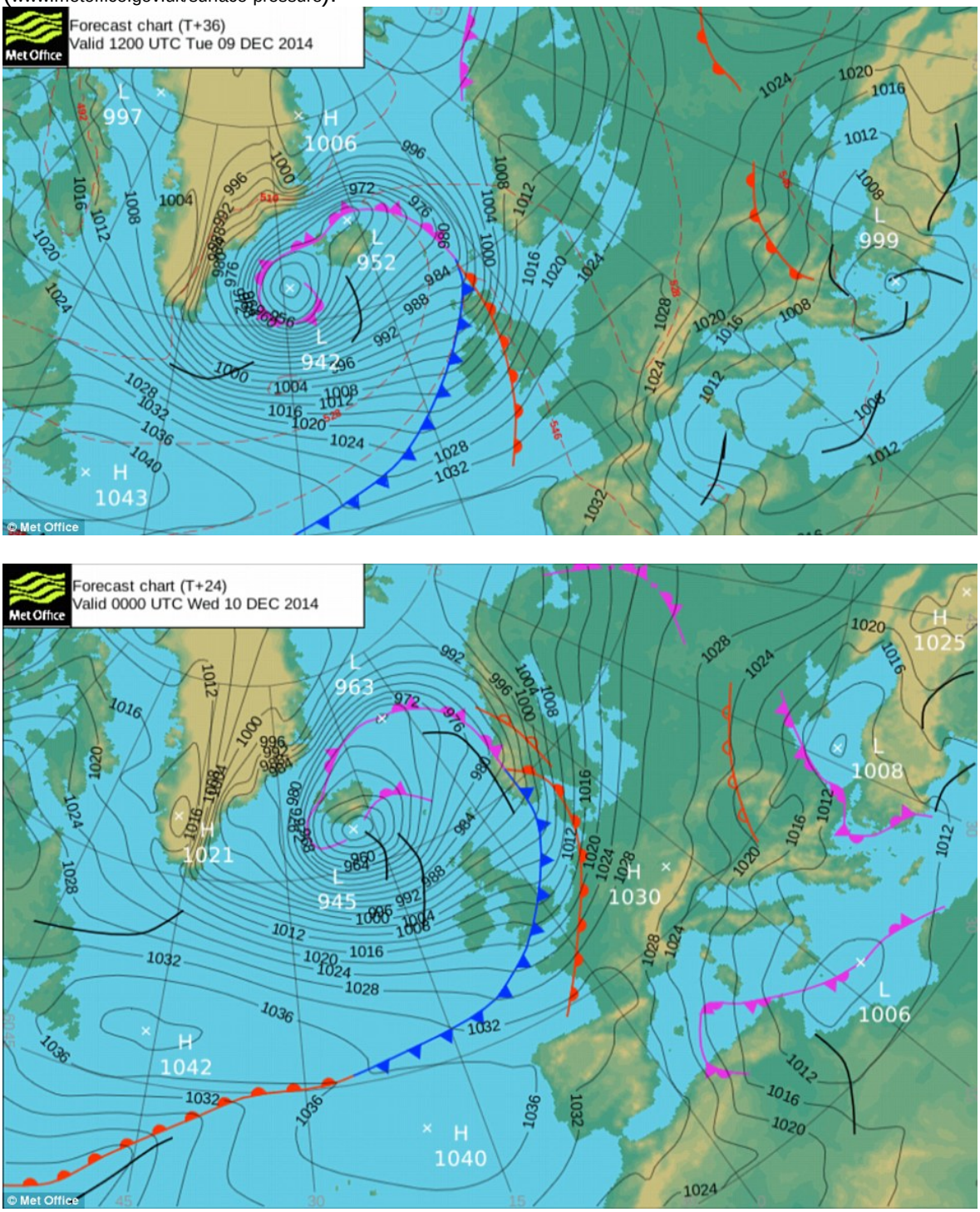


Section B: Climate and Weather

Table B1: The climate data for Addis Ababa, Ethiopia (9°1'48" N, 38°44'24" E; 2355 m above sea level)
(https://en.climate-data.org/location/532).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Temp (°C)	15.4	16.6	17.9	17.9	18.0	17.0	15.9	15.8	16.2	15.7	14.8	14.9
Precipitation (mm)	17	39	66	86	84	118	256	263	161	34	8	11

Figure B2: Surface pressure maps of 9–10 December 2014
(www.metoffice.gov.uk/surface-pressure).



Section C: Transportation and its Environmental Impact

Figure C1: The dominant road networks, shipping lanes and airline routes around the world (http://globaia.org/portfolio/cartography-of-the-anthropocene/#).

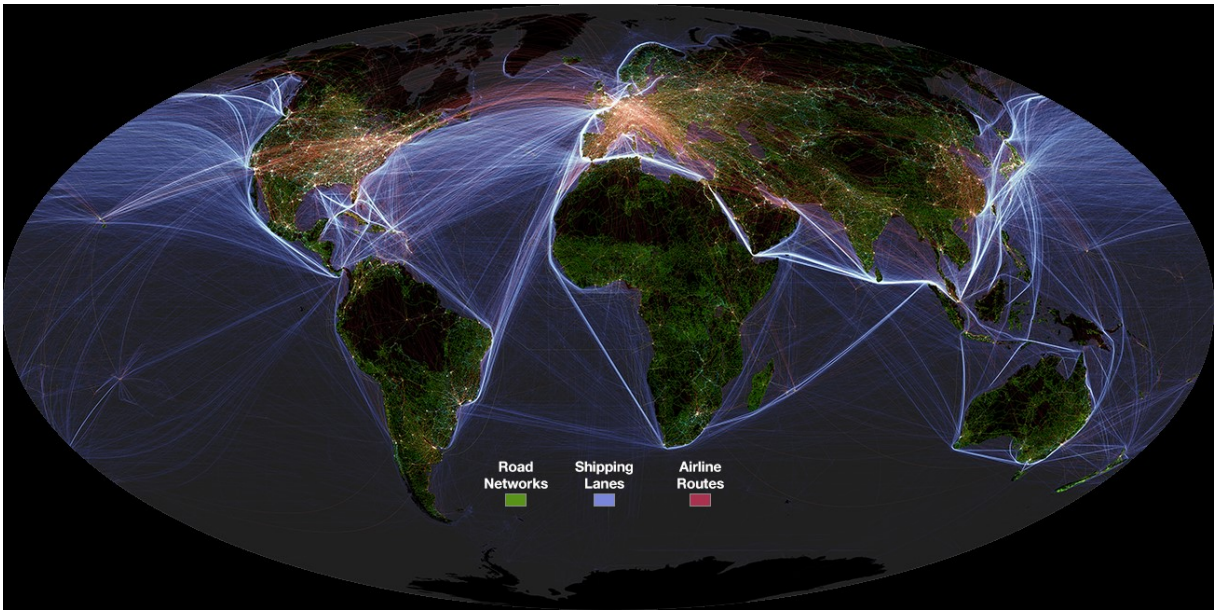
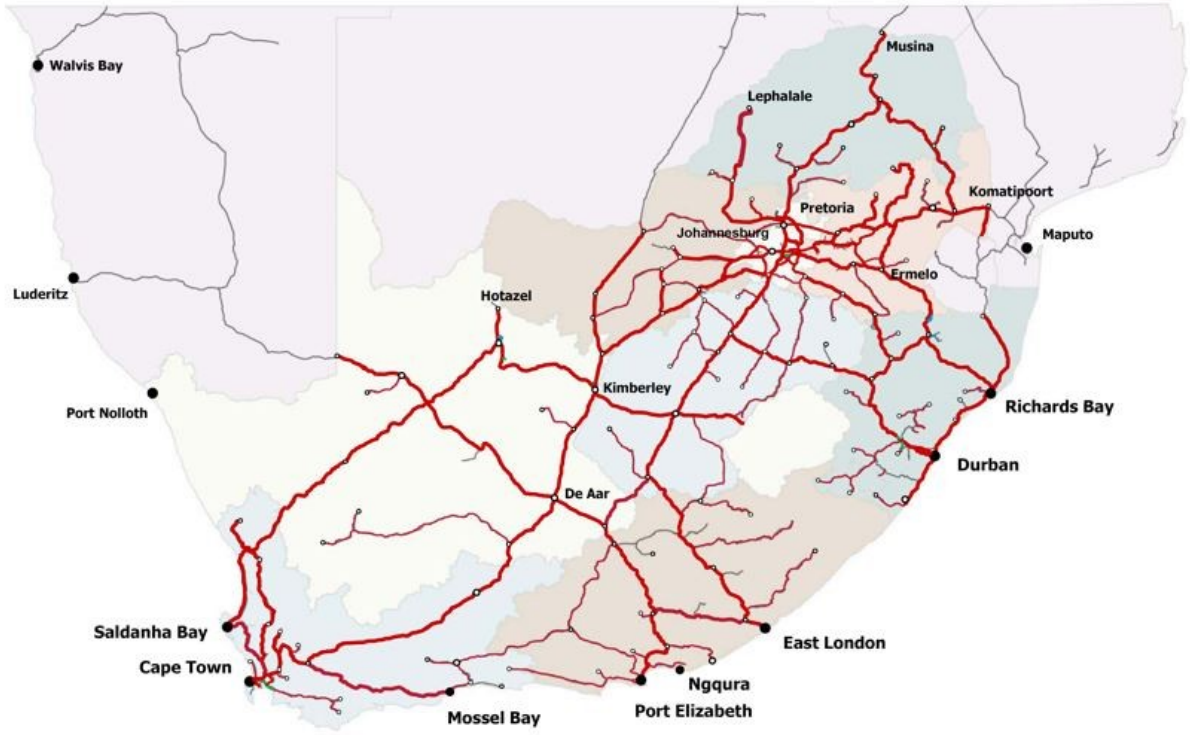


Figure C2: The rail network in South Africa (http://www.gautengfreight.co.za/page/rail-infrastructure).



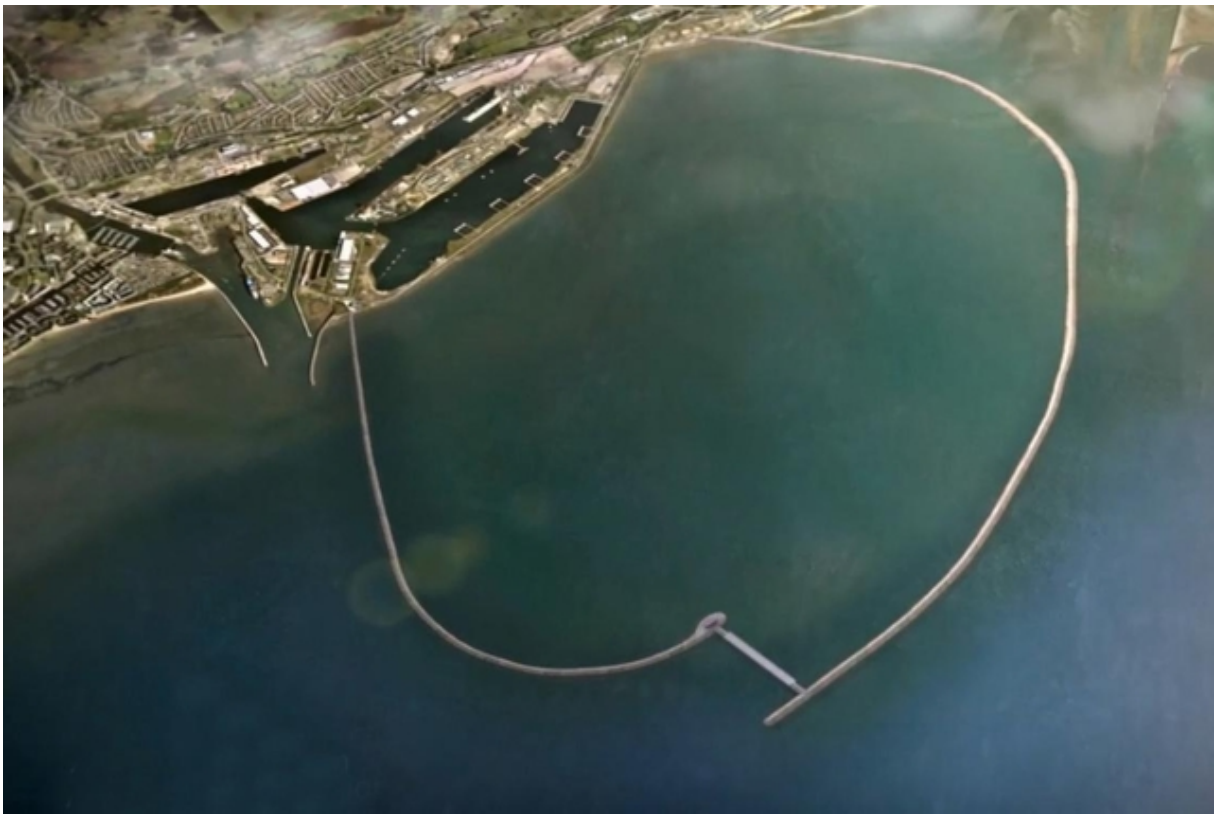
Section D: Tides

Figure D1: High tide at Mont Saint-Michel, France, 2005, left (http://en.normandie-tourisme.fr/discover/normandy-must-sees/the-10-top-normandy-must-sees/mont-saint-michel-106-2.html).

Figure D2: Low tide at Mont Saint-Michel, France, 2005, right (http://www.ulm.it/hangar/mix/beltrutto/lemont/msm.htm).

Figure D3: Satellite imagery of Mont Saint-Michel, France, 2003 (http://www.intelligence-airbusds.com/en/5751-image-detail?img=705#.WSFcWX20laQ).

Figure D4: Artistic impression of a future tidal lagoon power plant, where an artificial lagoon is created within seawalls (http://www.tagesanzeiger.ch/wissen/technik/Staudaemme-am-Meeresgrund/story/16401678).



Section E: Soil Degradation

Figure E1: … in Pakistan
(https://kenkenkenkenkenkenkenken.wordpress.com).

Figure E2: … in Iran
(https://permaculturenews.org/2009/02/24/report-on-our-iranian-consultancy-trip-of-december-2008).

Section F: Food Security

Figure F1: The trajectory of undernourishment in developing regions: actual and projected progress towards the World Food Summit (WFS) and Millennium Development Goal (MDG) targets
(http://www.fao.org/hunger/key-messages/en).

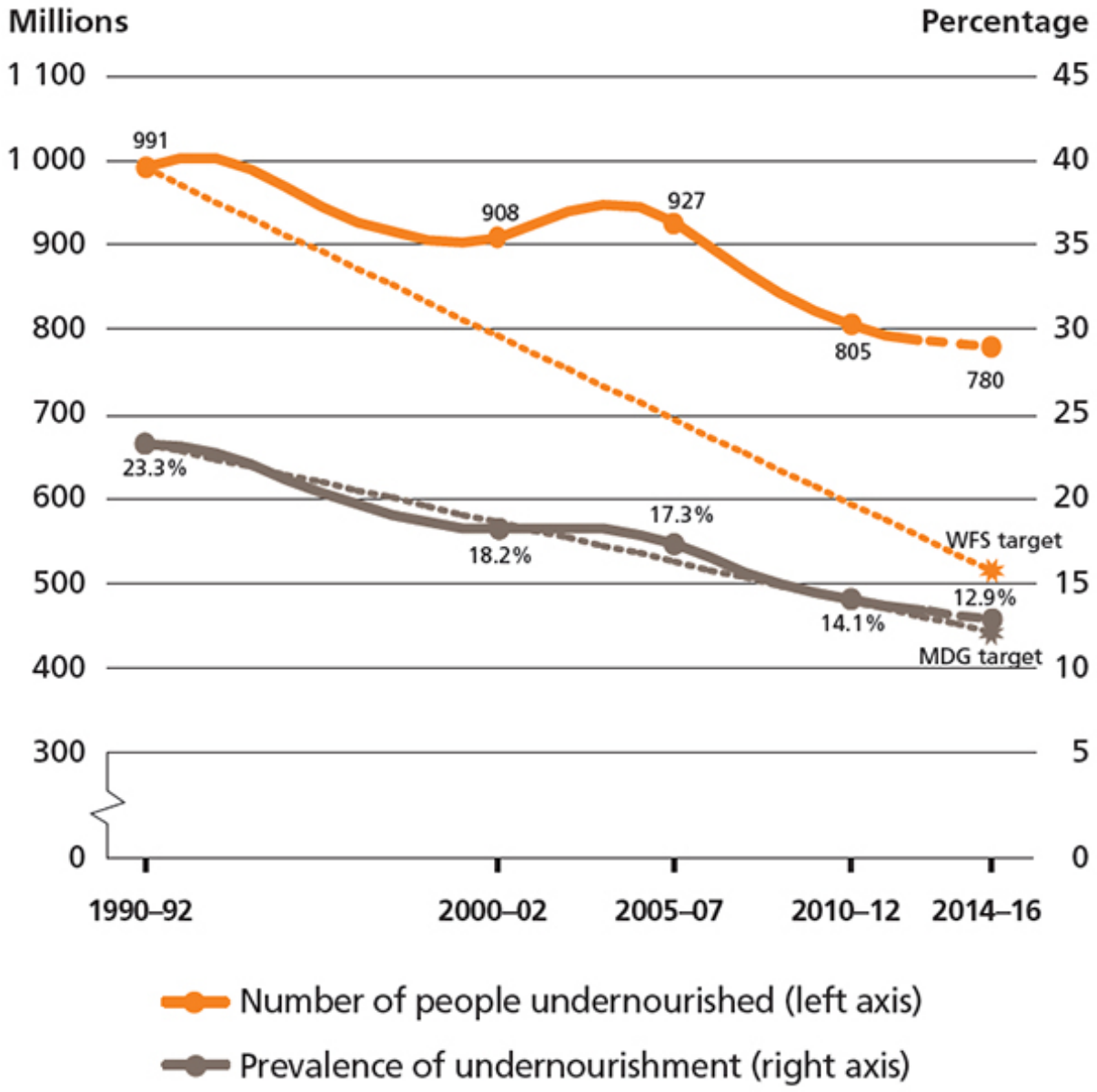
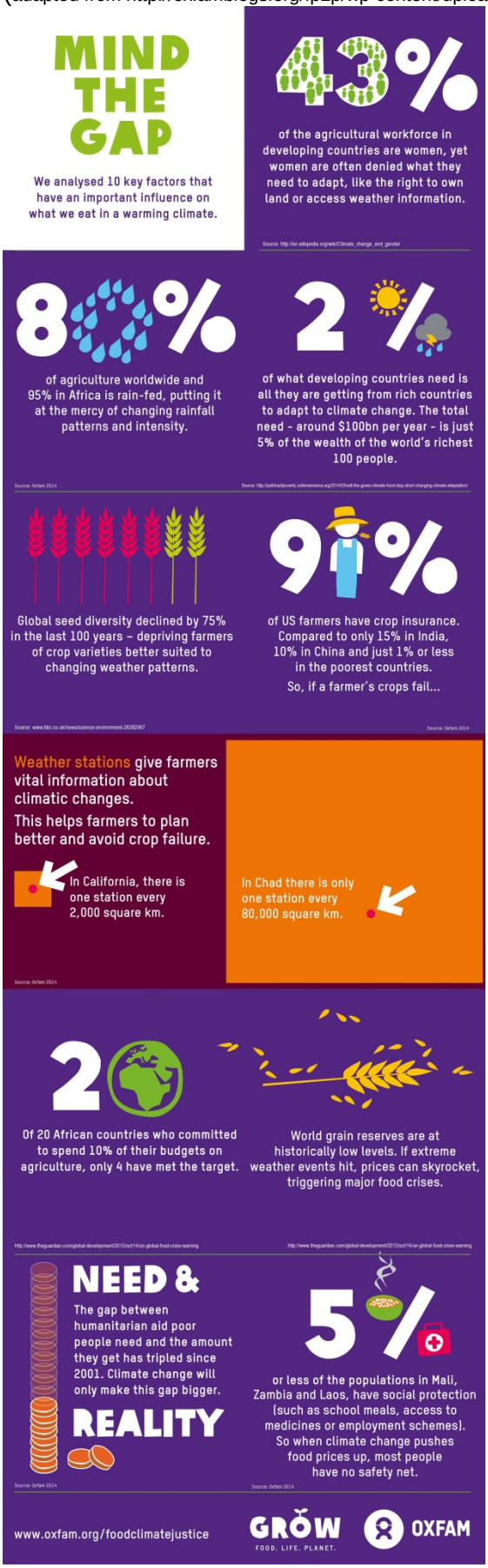


Figure F2: Nine influences on food security
(adapted from http://oxfamblogs.org/fp2p/wp-content/uploads/2014/03/oxfam-10-gaps-climate-preparedness-16001.jpg).



end ■