Teaching notes

Using this issue

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These notes are intended for use with GEOGRAPHY REVIEW Vol. 28, No. 2. They suggest ways in which you might develop further some of the articles in the magazine with your A-level and IB Diploma students.

Brunei’s capital city: a case study of sustainable urban growth (page 2)

This article will be of interest to geography students following a range of different courses and options. It is relevant to more than topics on urban studies. The case study also touches on important themes for studies of global interactions (IB), energy and development. The focus is Bandar Seri Begawan (BSB), the capital and largest city in Brunei, a small oil-rich state which gained independence from the UK in 1984. Oil and gas account for over 95% of export earnings. Brunei has the second-highest ranking in the human development index (HDI) among the southeast Asian nations.

Possible follow-up activities

1. Ask students to think carefully about the current sustainability of Bandar Seri Begawan. To what extent do current urban-management plans take into consideration (a) social, (b) economic and (c) environmental concerns? To assist with this, make reference to the ‘sustainability stool’ model. This is a visualisation of sustainable development that many students will already be familiar with. An example is shown at: http://www.leansixsigmaenvironment.org/wp-content/uploads/2014/01/3-legged-stool.jpg

2. From a development-studies perspective, small, high-income states form an interesting ‘global grouping’. How do they fit in with a global world view of ‘HICs, MICs and LICs’ or the Brandt Line? The five global economies with the highest GDP per capita are Qatar, Macao SAR, Luxembourg, Kuwait, and Brunei. The highest ranked of these have more than US$100,000 per capita. Are these the world’s most developed countries, or just the richest (on a per capita basis)? There is plenty for a class to discuss here. To support the discussion further, some of the most up-to-date information from the World Bank can be consulted here: http://siteresources.worldbank.org/ICPINT/Resources/270056-1183395201801/Summary-of-Results-and-Findings-of-the-2011-International-Comparison-Program.pdf

IB geography examination tip

This is a useful article for students to support their P2 studies. The Guide requires that students have examined sustainable urban management. This is defined as ‘an approach to urban management that seeks to maintain and improve the quality of life for current and future urban dwellers. Aspects of management may be social (housing quality, crime), economic (jobs, income) or environmental (air,
water, land, resources). The BSB Master Plan provides an excellent example of this for critical evaluation.

**Question and answer Tectonic hazards (page 6)**

In addition to helpful advice on examination technique, this article provides AS/A2 students with useful information about California’s ‘vulnerable population’ to reflect on. One of the most important principles of studies of risk and resilience is that vulnerability is unevenly distributed within populations.

**Possible follow-up activities**

1. Irrespective of whether or not students are following the Edexcel course (which this Q&A supports), Figure 1 includes rich data for class discussion.

![Figure 1 Population change in southern California 2008–35](image)

Questions for discussion could include:

- How might changes in population size lead to increased hazard risk in California?
- Why might changes in population structure increase risk even further?
- Why might migrants, for whom English or Spanish is not their first language, be especially vulnerable to hazards in California?
- Why might older or poorer people be less resilient than others?

2. Students might find it interesting to consult the ‘environmental justice’ report that this data set is extracted from. The *Southern Californian Association of Governments, Environmental Justice Report 2008* states that:

   One important demographic dynamic at work in Southern California includes the continuing change in the ethnic/racial composition. The share of the Hispanic population reached 44 per cent in 2005, about a 4 per cent increase from 2000 and a dramatic increase from only 10 per cent in 1960. The share of the Asian/Pacific Islander population increased from 2 per cent in 1960 to over 11 per cent in 2005. Since 1960, the share of the non-Hispanic White population declined from about 80 per cent to 39 per cent in 2000 and 36 per cent in 2005. The share of
African-American population in the region was just below 7 per cent in 2005. Since 2000, the vast majority (80 per cent) of the growth in the region were Hispanics.


**IB geography examination tip**

This is a useful article for students to support their P2 studies (hazards option). The Guide requires that students have examined the meaning of ‘vulnerability’ as follows:

- Vulnerability is a function of demographic and socioeconomic factors, and of a community’s preparedness and ability to deal with a hazard event when it occurs.
- Some sectors of a population are more vulnerable than others.

**Building on the basics Evaluating the demographic transition model (page 13)**

This column provides AS/A2 students a useful look at a very familiar model (both from GCSE and AS). It provides an evaluation of the model’s overall value, given that places such as the UK are being affected by a range of new population dynamics that could not have been predicted in 1929.

**Possible follow-up activities**

1. Can current UK population changes still be related in a meaningful way to the demographic transition model? A recent upturn in total births challenges the idea that the UK has permanently entered a ‘stage 5’ period of falling fertility. However, some people argue that we are experiencing a positive fluctuation within stage 4, following a negative fluctuation in the 1990s. The table below shows some important demographic factors which greatly complicate the analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration</td>
<td>Since 2004, over 1 million eastern European migrants have entered the UK. It is an age-selective movement: economic migrants are overwhelmingly of childbearing or childrearing age (18–40)</td>
<td>The UK’s crude birth rate has increased to 13 per 1,000 per year, reflecting the growth in the proportion of people of child-bearing age</td>
</tr>
<tr>
<td>Migrant fertility</td>
<td>The fertility rate among women in the UK has risen. Much of the increase is due to higher fertility rates in immigrant households. Cultural factors sometimes favour higher fertility for some ethnic groups</td>
<td>The fertility rate of foreign-born women is 2.2. This is greater than the population ‘replacement level’ of 2.1 children per woman</td>
</tr>
<tr>
<td>Fertility rate of British-born women</td>
<td>Fertility has risen for British-born women too, which has caused great surprise among demographers. Contributing factors may include fertility treatment for older women and the arrival of grandchildren for the 1960s ‘boomers’</td>
<td>Native-born British women are actually responsible for one third of the increased number of births in recent years</td>
</tr>
<tr>
<td>Ageing population</td>
<td>The UK’s population is rapidly ageing. The fact that the crude birth rate has also risen gives some indication of just how much youthful</td>
<td>The number of Britons aged 75 and over has increased by 26% since 2001</td>
</tr>
</tbody>
</table>
inmigration has taken place in recent years (given that the CBR is dependent on the age structure of a population)

2 Two possible exam questions are shown below. This is a data-stimulus task, requiring students to use the information in the graph in conjunction with some of their own ideas.

**Figure 2** Births and deaths in the UK, 1901–2041

**Compare the trends shown in Figure 2. (5 marks)**

*Tip*

The command word ‘compare’ should be tackled using comparative language such as ‘whereas’ or ‘in relation to’. For instance, a good answer might begin: ‘Births are consistently high in relation to deaths throughout the entire period shown. There is a general overall fall in births but deaths rise slightly. ‘Anomalies’ or unusual peaks and troughs should be highlighted too, using supporting data from the graph.

**Suggest reasons for the changes shown in the numbers of births recorded. (10 marks)**

*Tip*

A good answer will distinguish between the long-term change shown and some of the temporary changes. The former relate to century-long developmental moves, such as women’s changing role in society, whereas the short-term fluctuations relate to particular historical events, such as wars.

**Tropical cyclones in the South Pacific: impacts on island communities (page 16)**

This is a first-class article to support the teaching of hazards and meteorology. The fact that it presents ‘positive’ impacts (new landforms) is sure to intrigue students.

**Possible follow-up activities**

One possible exam question is shown below. This is an evaluative question, requiring students to use the information in the article in conjunction with their own ideas about hazard events and impacts.

**Examine the varied effects of hurricanes on local communities and environments. (15 marks)**
Tip
This question uses the adjective ‘varied’ to encourage students to think of a wide range of possible effects. There are positive and negative impacts to consider, although these might be experienced on different time scales. The impacts on local communities can be compartmentalised into short-term and long-term effects, and into social and economic consequences also. ‘Environmental’ impacts might include landforms but also the effects for ecosystems. The best answers to this question are likely to stress that impacts vary greatly from places to place, as the article itself says on page 17. In addition to contrasts for richer and poorer places/communities, the suggestion that different types of physical environment are affected in varying ways is well worth pursuing.

The global flow of people (page 20)
Study of this superb visualisation of population flows should perhaps be made compulsory. It will be of enormous interest to geography students, especially those following IB Higher Level.

Possible follow-up activities
As a teaching resource, there is great value here in:

- exploring how the illustration focuses our attention on the extent to which population movements are regional (occurring within Europe, for example) or are truly global (moving between distant continents);
- thinking about what the population characteristics of the migrants may be (which Box 4 also emphasises).

Because the illustration is complex, it might be useful to focus students’ attention on Europe at first.

- What proportion of the people moving into and out of eastern Europe are moving to/from other parts of Europe?
- What proportion of the people moving into and out of southern Europe are moving to/from non-European places?
- What evidence is there that western Europe is a global hub, meaning that flows of people link western Europe with many other places across the world?

IB Geography examination tip
This is a wonderful resource for Higher Level students to study in support of their P3 studies, providing a visualisation of global interactions taking place between every region of the world. Students can explore how the movements shown are related to other important ideas in their study Guide, as follows:
• Which places are most connected? Can a global ‘core’ of hub areas be identified?
• How has technology assisted the flows shown?
• Are these labour flows, or other migrations? What kind of remittance flows are generated?
• How are physical environments and urban landscapes changed as a result of these flows?
• What kinds of cultural exchange and change are generated?
• How do multi-governmental rules help to encourage these flows?
• Are these flows resisted, and by whom?

Everybody’s talking about… MINT (page 22)

This article should be of interest to human geography students, especially those studying emerging economies and development studies.

Possible follow-up activities

1 Jim O’Neill, who coined the BRIC catch-phrase back in 2002, has refocused his attention on Mexico, Indonesia, Nigeria and Turkey. Each has a large, youthful population capable of delivering a ‘demographic dividend’. This means that a recent fall in births has resulted in large, youthful working-age cohorts with relatively fewer young dependents. This demographic characteristic boosts economic and social development because:

• A large, young workforce serves as a powerful magnet for ‘footloose’ global capital.
• Workers with fewer children begin making investments, contributing to financial growth.
• Women become more likely to enter the formal workforce, promoting greater gender equality.
• Salaried workers quickly become consumers; so global retailers and media corporations view these countries as important emerging markets (MTV and Disney are targeting India).


2 Is Nigeria or South Africa the most important emerging economy in Africa? A comparison of the two countries would be an interesting exercise for students to carry out. South Africa now attends the annual BRICS summits, while Nigeria is included in the MINT group. One especially interesting fact is that Nigeria recently leap-frogged ahead of South Africa to gain the number one GDP ranking in Africa. However, this was achieved by a statistical sleight of hand by bringing forward the base year for Nigeria’s GDP calculations to 2010 from 1990, when the structure of its economy was very different and services such as banking and telecoms had barely taken off. Newly updated figures have nearly doubled estimates for GDP. Find out more at: http://www.cnbc.com/id/101559433

3 A possible exam question is shown below. This is a data-stimulus question, requiring students to use the information in the figure in conjunction with some of their own ideas about development.
Suggest what Figure 1 tells us about world development. (10 marks)

![GDP growth in BRIC and MINT countries](image)

**Tip**
This is a wide question that presents plenty of opportunities to craft an interesting, structured response. Focusing on economic development, we can see that there is continued growth with an exception in 2008. However, the BRIC and MINT countries are growing at above-average rates, and they are home to around half the world’s people. This suggests many other countries must not be growing nearly as rapidly (otherwise the world average would be higher). Also, Figure 1 tells us nothing about social and political development. Do other kinds of developmental change accompany the economic growth shown here?

**IB Geography examination tip**
This is a useful article for Higher Level students to support their P3 studies. As the MINT countries grow economically, how are their globalisation scores changing? Students could undertake a survey of recent KOF reports and the rankings for the MINT countries: [http://globalization.kof.ethz.ch/](http://globalization.kof.ethz.ch/)

**Cold environments Antarctic glaciers and climate change (page 28)**
Here is a really thought-provoking piece of physical geography. This article introduces a number of new concepts that students may not be familiar with.

**Possible follow-up activities**
1. Some important ideas and concepts are flagged up. In groups, students could take it in turns to explain to the rest of the class the meaning, and importance, of:
   - **Grounding line** (When a glacier ends in the sea, the snout may start to float. The boundary between floating ice and ice resting on the floor of the ocean is the grounding line.)
• **Cosmogenic nuclide dating** (When cosmic rays collide with particular isotopes in rocks, a spallation reaction occurs, resulting in the formation of a new rare, isotope, which can be dated).

2 A possible exam question is shown below. It is a data-stimulus question, requiring students to use the information in Figure 1 in conjunction with some of their own ideas about cold environments.

**Examine the pattern of ice movement in Antarctica. (15 marks)**

![Map of Antarctica with ice streams](image)

**Tip**
A good answer will include elements of both description and explanation. For the description, first focus on the ‘big picture’, in terms of ice speeds shown at the centre of the continent and near its margins. Second, look for smaller-scale variations along valleys and tributary glaciers. Explanation could focus on the depth of the ice in different locations, as well as proximity to the ocean.

**Geographical ideas Malthus and population (page 32)**

This column focuses on a classic idea in geography: ‘Malthusian’ population growth.
Possible follow-up activities

1. Geometric growth is an interesting idea, which can be taught in a range of different ways. The suggestion of folding paper 45 times is always worth exploring: http://ed.ted.com/lessons/how-folding-paper-can-get-you-to-the-moon

2. A recent GEOGRAPHY REVIEW Everybody’s talking about column (Vol. 27, No. 1) looked at the importance of growing consumption, alongside population, as a major threat to the sustainability of natural resources.

   - Measured by energy consumption, today’s average US citizen has an ecological footprint 20 times larger than a person living in the pre-industrial 1700s.
   - In other words, the same area of land that supports ten US citizens with high-impact lifestyles today could support 200 low-impact lifestyles.
   - Therefore, if the world’s population eventually stabilises at 9 billion around 2050 — and economic development eventually grants the majority of these people a living standard akin to the current USA — this becomes equivalent to 180 billion ‘pre-industrial’ lifestyles, in terms of energy consumption.
   - Based on this information, ask students to debate the proposition that: ‘Rising consumption is a greater threat than population growth.’

Why are deserts dry? (page 34)

This article will be useful for AQA students who are learning about drylands, as well as IB candidates who take the ‘extreme environments’ option.

Possible follow-up activities

1. Make sure students understand the critical difference between ‘drought conditions’ and ‘arid conditions’. This article deals with places where low rainfall is normal. A drought is a period of time when rainfall is lower than expected, resulting in water deficiency.

2. Practice exam questions can be built around the illustrations included in the article, as shown below.
a Describe the global pattern of hyperarid areas as shown in Figure 1. (4 marks)

b Explain three reasons for the uneven distribution of semi-arid areas. (10 marks)

Tip
Note that the focus changes between part (a) and part (b) from hyperarid to semi-arid areas. For part (a), provide a clear overview that makes reference to lines of latitude and also recognises any anomalies to the general pattern. For part (b), use the GEOGRAPHY REVIEW article to provide you with three separate factors. Be careful not to write too much as there are only 2 marks available per factor. The challenge is to produce a clear, concise explanation.

Environment today Beijing: environmental issues in a world city (page 38)
The controversy over the environmental impacts of China’s growth continues.
Possible follow-up activities
Chinese citizens are increasingly active in protesting against environmental degradation. An interesting online resource is available at http://www.thechinastory.org/yearbooks/yearbook-2013/forum-land-law-and-protest/nimby-protests/ There are many images here accompanied by an illuminating commentary: ‘Many of the NIMBY protests in China oppose the building of new petrochemical and plastics factories, with plants intended to produce paraxylene, or PX, used in paints and plastics a particular target.’

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