Teaching notes

Using this issue

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These notes are intended for use with GEOGRAPHY REVIEW Vol. 28, No. 3. They suggest ways in which you might develop further some of the articles in the magazine with your A-level and IB Diploma students.

The diabetes epidemic: a case study from Sri Lanka (page 2)

This article provides A2 and IB diploma students with useful information about an important ‘disease of affluence’ — type 2 diabetes — and its occurrence in Asia, especially Sri Lanka.

Possible follow-up activities

1 Mexico provides an interesting parallel case study from Latin America, which reinforces the message that diseases of affluence increasingly affect emerging economies too (Mexico is one of the ‘MINT’ group of emerging economies). Many newspapers have reported on this recently.

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<th>Guardian</th>
<th><a href="http://www.theguardian.com/world/2014/jan/16/mexico-soda-tax-sugar-obesity-health">http://www.theguardian.com/world/2014/jan/16/mexico-soda-tax-sugar-obesity-health</a></th>
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According to these reports, adult female obesity first reached epidemic proportions in 1999. Today, more than 200,000 deaths a year in Mexico are linked to metabolic syndrome and 80,000 to diabetes, with obesity a key trigger. A report in the Financial Times says that: ‘The explosion coincided with Mexicans’ embrace of US fast food alongside their beans and tortillas, plus less exercise — almost a third of children spend four hours a day in front of computer screens, for example — compounding a genetic propensity to accumulate fat, according to the state health service.’ Recently, the video ‘What did Poncho die of?’ aired on Mexican social media, became a topic for national debate. The 5-minute film shows a grossly overweight 12-year-old, Alfonso Rodriguez, also known as Poncho, who collapses in his school playground, and later dies in hospital.

2 Two possible exam questions, based on IB Diploma paper 2, are shown below. This is a data-stimulus task, requiring students to use information from the map in conjunction with some of their own ideas.
(a) Briefly describe the pattern and trends shown. (4 marks)

**Tip**
The question has two elements: ‘pattern’ and ‘trend’, with 2 marks available for each. The command ‘briefly describe’ tells us that only a simple summary is required (though for full marks, there may be a requirement to quantify/quote data). The pattern is in fact, a simple one, wherein the highest numbers of sufferers are in Asia, and the fewest are found in Africa. All areas show a growth trend, but the lowest increase are in North America and Europe.

(b) Suggest reasons for regional variations in the projected growth of diabetes sufferers. (10 marks)

**Tip**
A good answer will not only provide a range of reasons why more people are suffering from this condition, but will additionally focus on why the projected increase varies so much from region to region. Africa shows the highest percentage increase because it is growing from the smallest base (just 10 million sufferers in 2007).

**IB Geography examination tip**
This is a useful article for students to support their P2 studies (food and health option). The Guide requires that students can explain the global distribution of diseases of affluence.

**New maps of ecosystem services in England (page 9)**
For students who have an ecosystems topic in their examinations, the 2014 update of ecosystem services in England is well worth investigating further.

**Possible follow-up activities**
1. New research shows that Britain’s rivers are the cleanest they have been in recent decades. Also, river ecosystems are healthier, which came as a big surprise to researchers from Cardiff
University who had expected to see falling numbers of organisms on account of warmer water temperatures. Forty of the 78 species studied by the researchers have become more widespread. Find out more at: http://www.bbc.co.uk/news/uk-wales-27656357

2 Renowned author George Monbiot offers an interesting critique of the ecosystems services approach: http://www.theguardian.com/commentisfree/2012/aug/06/price-rivers-rain-greatest-privatisation

**Fish stocks in crisis: why can’t we exploit fish sustainably? (page 10)**

This article gives useful updates on fishing and fish stocks, which will be of particular interest for some IB candidates. The author also provides stretch and challenge by investigating the validity of the concept of maximum sustainable yield (MYV).

**Possible follow-up activities**

1 Ask students to investigate different approaches to the management of fish stocks. An interesting contemporary example is the ‘no-take zone’ in Scotland’s Lamlash bay. An organisation called COAST (Community of Arran Seabed Trust) successfully campaigned for this several years ago. No-take zones have helped regenerate fish stocks in other parts of the world by offering species a protected spawning ground. COAST’s specific aims were to:

   - improve the marine environment and reverse fish decline
   - help sustain the livelihood of all those dependent on tourism as well as fishing
   - increase the popularity of the area as both a diving site and tourist destination.

Students can view a 2013 update of this case study at: https://www.youtube.com/watch?v=OEQq2TTgCsU&feature=player_embedded

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

![Global fish production, 1950–2012](image)

**Figure 1 Global fish production, 1950–2012**

(a) Describe the trends shown. (4 marks)
The word ‘trends’ should be tackled using language that highlights immediately what the ‘big picture’ is (whether there is a slight or steep increase, or a levelling off of growth, for instance). The best answers will selectively cite some key data, such as the year in which aquaculture growth really began to take off. Alternatively, good answers may communicate the changes using carefully chosen language, for instance: ‘Aquaculture yields quintupled between 1990 and 2012’.

(b) Suggest reasons for the changes shown. (6 marks)

Tip
A good answer may suggest three very differently themed reasons, such as: economic development of Asian countries (hence the overall growth in production to meet rising demand), global governance (since the 1980s, we see wild fish catch levelling off because many countries, such as EU nations, have introduced stricter MSY rules), growth of global supply chains for supermarkets (who have promoted low-cost sales of farmed fish, especially salmon).

IB Geography examination tip
This is an useful article for students to support their P2 studies. The Guide requires that students ‘investigate the spatial and temporal consequences of overfishing’ and can evaluate ‘a case study of a conservation policy implemented to provide sustainable fish yields. For candidates who have their eye on the highest grades, this article allows them to question the assumption that ‘sustainable fish yields’ can in fact be identified. The author notes that:

Fisheries scientists were over-optimistic in their belief that they could accurately assess and predict the behaviour of fish populations. Focusing on single-species populations existing in a balanced ecosystem caused them to ignore the reality of an intensely dynamic aquatic ecology. Proponents of so-called ‘ecosystem-based management’ believe that a vast number of environmental variables (temperature, pH, intra- and interspecies competition, currents, etc.) affect the reproductive abilities of fish stocks. Fish stocks are thus affected by far more than the number of adult fish removed per annum by fishing fleets.

Based on this argument, it is possible to argue that all fishing conservation polices may be inherently flawed, if they are underpinned by an inaccurate MSY estimate.

Down under The Great Barrier Reef under threat (page 17)
Here is a thought-provoking look at the multiple stresses affecting one of the most well-known World Heritage sites.

Possible follow-up activities
1 This article provides a great opportunity for students to analyse the geographical connections that exist between different physical processes. For instance:
   • the authors show how cyclones interact with fluvial systems in a way that accelerates the problem of nutrient runoff into coastal waters
   • nutrient runoff, in turn, modifies coastal ecology by (a) promoting growth of the crown-of-thorns starfish population (b) encouraging eutrophication.
2 Students can investigate the UNESCO response further using these links:


- [http://www.theguardian.com/environment/great-barrier-reef](http://www.theguardian.com/environment/great-barrier-reef) The Guardian has dedicated extensive column space to the Great Barrier Reef over the last year, giving students plenty of information to work with.

**ICT and globalisation (page 22)**

This article supports teaching of (a) globalisation and (b) the shrinking world (time-space compression), by examining in some detail the thematic geographical connections between these two sets of ideas.

**Possible follow-up activities**

1 One possible IB exam question is shown below. It is an evaluative question, requiring students to use the information in the article in conjunction with their own ideas about globalisation and technology.

**Examine how the growth of global interactions and improvements in communications technology are interrelated.** (15 marks)

*Tip*

To attain the highest mark band E, an answer ought to give some acknowledgement or suggestion of an ‘interrelationship’. This could be achieved by showing that technologies do not come ‘from nowhere’ but are instead the outcome of powerful global players actively seeking time-space compression in an attempt to increase product sales, turnover times or break into new markets. Ideally, the role played by the research wings of technology TNCs should be appreciated. The reciprocal profit motive that drives the technical creativity of TNCs such as Apple, Microsoft and Google is a crucial part of the globalisation-shrinking world equation.

Some potential themes for this essay are shown below:
Since this article was written, the UK media have given a great deal of coverage to the role that social media have played in helping the militant group Isis (or IS) to recruit young people from the UK, and to circulate propaganda. This is a theme that students may want to discuss, though it is a topic that needs handling with care, due to the disturbing nature of the violence. An interesting starting place to begin investigating this topic is work carried out by Melanie Smith, a recent Nottingham University geography graduate (and ex-student of Bancroft’s School) now based at King’s College International Centre for the Study of Radicalisation. Smith is studying how an estimated 200 Western women have journeyed to Syria, and the role social media have played in this migration: http://www.theguardian.com/world/2014/sep/06/british-women-married-to-jihad-isis-syria

Urban air pollution: measuring and managing human exposure (page 28)

This is an important topic for the study of physical–human interactions. Up-to-date knowledge of urban air pollution can assist students with their work on urban geography and atmospheric processes.

Possible follow-up activities

1 Urban air pollution in China is a growing problem that can be investigated. High levels of air pollution in northern China – much of it caused by an over-reliance on burning coal for heat — will
cause 500 million people to lose an aggregate 2.5 billion years from their lives, according to a study published in the journal *Proceedings of the National Academy of Sciences*. Read more at: http://www.theguardian.com/environment/2013/jul/08/northern-china-air-pollution-life-expectancy

2 In developed countries great progress has been made in improving air quality. However this has been helped by the fact that dirty polluting industries have moved abroad (for instance, to China) while cleaner, post-industrial economic activities have replaced them. In the UK, the winter of 1952 is remembered as a time of ‘killer smog’. On the 60th anniversary of this year, the Guardian newspaper published photos of the smog with an introduction pointing out that visible coal smoke pollution has been replaced today by invisible traffic fumes that are equally dangerous: http://www.theguardian.com/environment/gallery/2012/dec/05/60-years-great-smog-london-in-pictures

3 Use of smartphone apps that track air pollution is likely to become commonplace soon, helping people to avoid the most dangerous areas. This interesting article from China covers some recent developments in this field of technology: http://www.scmp.com/lifestyle/article/1581750/smartphone-app-measures-air-pollution

*IB geography examination tip*

This is a useful article for students to support their P2 studies (urban environments option). The Guide requires that students can (a) examine the effects of structures and human activity on urban microclimates, including the urban heat-island effect and air pollution, and (b) evaluate one environmentally sustainable pollution management strategy.

**Development update What is microfinance? (page 35)**

This Development Update should be useful to human geography students, especially those with an interest in development studies.

**Possible follow-up activities**

1 To find out why Muhammed Yunus led the microfinance movement, students can consult this interview from the *New Statesman* magazine in 2012: http://www.newstatesman.com/economy/2012/01/interview-business-money

2 Gill Miller’s article provides sufficient caveats for students to be able to offer an assessment of the strengths and weaknesses of microfinance, as follows:

Assess the extent to which microfinance can help to narrow the development gap.

Here are some points that students could consider as part of their answer:

- ‘Borrowers...have informal jobs and no history of credit, and they often have limited education. It is impossible for them to get credit to invest in seeds, fertilisers, tools or livestock.’ As such, providing these people with access to credit can certainly narrow the economic development gap.

- ‘Farmers who borrow money for seeds and fertilisers are likely to raise productivity and increase their food security as well as farm sales.’ A parallel study of microfinance in Malawi also makes this same point (a small investment in fertilisers can break the cycle of poverty): http://www.newstatesman.com/africa/2009/01/farm-malawi-crops-local

- ‘Women who are enabled to save and borrow may raise their status within a household and village.’ This is an important point for the overall assessment as it shows that there are
development gaps other than economic development to consider. Gender inequality is another aspect of the global development gap, and microfinance has played an important role in improving the status of women in some communities.

• ‘Although household income may increase, this does not replace the responsibilities of government and communities to invest in basic infrastructure such as schools, clinics, clean water and sanitation.’ This final point is important as it shows that the power to narrow the development gap lies with a number of different players, including state governments. There is a limit to what can be achieved, in terms of narrowing the global development gap, without effective state governance.

**IB geography examination tip**
This is an useful article for students to support both their P1 and P3 studies. Microfinance is a financial flow worthy of consideration in P3, that can have a positive influence on economic and gender inequalities (P1).

This resource is part of GEOGRAPHY REVIEW, a magazine written for A-level students by subject experts. To subscribe to the full magazine go to: [http://www.hoddereducation.co.uk/geographyreview](http://www.hoddereducation.co.uk/geographyreview)