

UNIT 1 TOPICAL CASE STUDIES & TEACHING SUGGESTIONS

This resource contains topical news updates and teaching suggestions that may be of use to teachers delivering Unit 1 of the Edexcel GCE Geography Specification 2010-11. All information is drawn from newspaper reports filed during July and August 2010 (key sources: the Financial Times and Guardian).

World at Risk

GLOBAL HAZARD TRENDS: HOW AND WHY ARE NATURAL HAZARDS BECOMING SEEN AS AN INCREASING GLOBAL THREAT?

■ Drought and wildfires in Russia ¹



Crop production under pressure



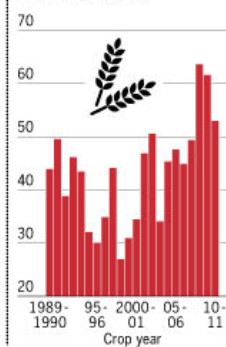
States of emergency declared:

- 1 Moscow
- 2 Vladimir
- 3 Nizhny Novgorod
- 4 Ryazan
- 5 Mordovia
- 6 Marii-El
- 7 Voronezh

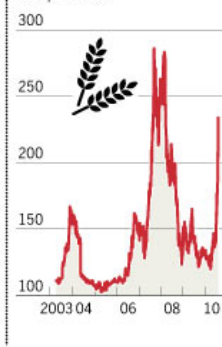
Other main wheat-producing regions

- A Krasnodar
- B Rostov
- C Stavropol

Russia wheat production



European wheat price



Moscow's scorching conditions

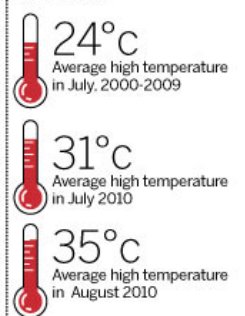


Photo: EPA

Sources: USDA; Thomson Reuters Datastream; WolframAlpha

Source: Financial Times ²

This is a contemporary case study of a **hydro-meteorological** hazard. In the summer of 2010, unusually high temperatures and a long drought led to wildfires breaking out across parts of the continental interior of Russia. President Medvedev declared a state of emergency and sent in troops to help combat the infernos. More than 7,000 fire fighters, troops and volunteers were needed to tackle the flames.

Extreme annual temperature ranges are a normal climatic feature of this region but these are the most aggressive fires that Russia has experienced in 40 years. Intense heat and swift winds encouraged the dramatic spread of the flames.

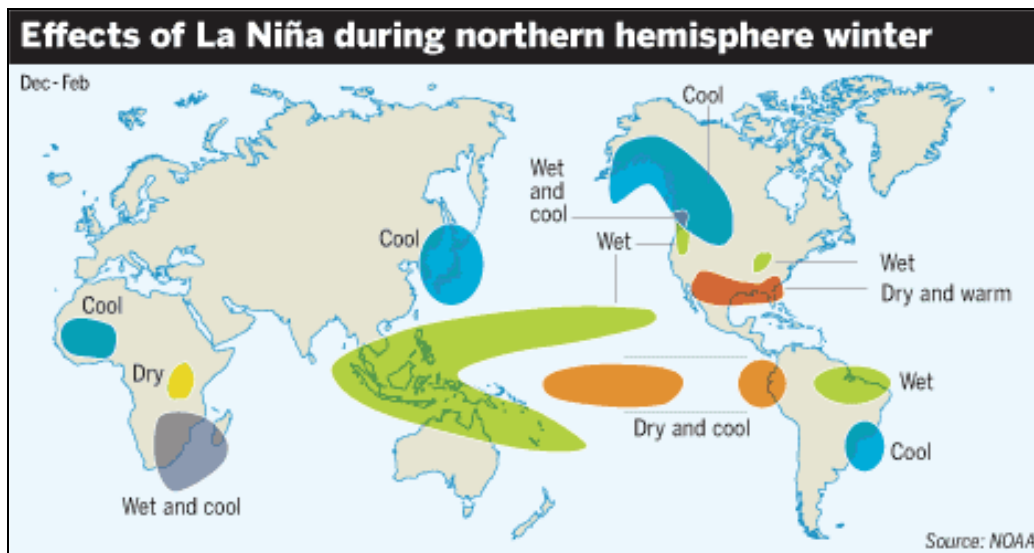
- 50 people died
- Many inhabitants were forced to re-locate
- This fire accompanied the worst heat wave in Russia since records began 130 years ago
- The area affected was greater than 3,000 square kilometres

There was also a risk that the spread of the wildfires could lead to nuclear contamination in the Bryansk region, 500 km south-west of Moscow. There, the fires threatened the re-release of harmful nuclear particles into the atmosphere (a legacy of fall-out from the Chernobyl nuclear disaster of 1986).

Activity: Research

Why has drought affected some areas of Russia and not others during 2010? What natural factors influence the distribution of drought?

■ **La Niña brings a rise in hazards** ³



Source: Financial Times ⁴

La Niña is a weather phenomenon caused by a fall in water temperature in the tropical Pacific. It can alter rainfall and temperature patterns across some of the world’s most important tracts of agricultural land. La Niña is the opposite phenomenon to **El Niño**, which is a warm ocean current that appears off the South American Pacific Coast every few years. The current La Niña comes on the back of the strongest El Niño since 1997, which ended in May 2009 having caused widespread drought during the first few months of 2010.

As part of your geography course you are only required to answer specific questions about the phenomenon of El Niño. However, understanding how La Niña works can enhance your overall understanding of this important phenomenon influencing the global distribution of hazards and changes in the frequency of their occurrence.

The effects of La Niña strengthened throughout 2010, bringing hazardous impacts to Argentina, Brazil, South Africa and Australia as the map above shows. In La Niña years, Argentina and other South American countries are predicted to receive low rainfall, which adversely affects the growth of wheat, coffee, corn and soya bean crops. Oil and natural gas production also suffer when La Niña exacerbates hurricane activity. In contrast, South Africa and Eastern Australia may benefit from more rainfall.

Activity: El Niño

How would you expect an El Niño event to impact on people and places? Draw a map based on the one above to show the impacts of El Niño instead. Annotate the map to explain the changes.

■ Flooding in Pakistan

Devastating floods hit Pakistan in the summer of 2010. The hazard hit first in the north-west of Pakistan with the beginning of the annual monsoon rains. Unprecedented flooding then took place, enveloping large areas of the country.

- The death toll was an estimated 1,600 people
- 17 million people were displaced
- They were left at risk of disease, food shortages and clean water supplies
- 8 million people were left in some need of emergency assistance
- Children were especially vulnerable to waterborne diseases and sadly there were cases of diarrhoea, dehydration and malnutrition

Aid agencies were left with the long-term problem of helping Pakistan's Government to start reconstructing the country's infrastructure and providing homes for the displaced. Food shortage fears look set to last well into the future.

Two-thirds of the population of Pakistan are dependent on farming leaving them especially **vulnerable** to the effects of hazards. The number of those affected by the 2010 floods was actually far greater than that of the 2004 Asian tsunami and the 2010 earthquake in Haiti. However, the number killed was not nearly as great as for some 20th Century flood events. This is in line with the general observed hazard trend: *numbers affected are rising but fatalities are falling. This generalisation applies to countries at all stages of development.*

■ Economic costs of disasters are rising ⁵

Another important hazard trend is *rising costs over time*. Natural hazards in the first six months of 2010, which included major earthquakes suffered in Haiti and Chile, led to all-time record losses of \$22 billion for insurance companies. Other disasters causing insurance losses in 2010 included an earthquake in China, the volcanic eruption in Iceland and a major winter storm which affected much of Western-Europe. A previous disaster loss record was set in 2008 – it did not last long!

Activity: Essay

Examine recent global trends in the economic and social impacts of natural disasters. (15 marks)

CLIMATE CHANGE AND ITS CAUSES: IS GLOBAL WARMING A RECENT SHORT TERM PHENOMENON OR SHOULD IT BE SEEN AS PART OF LONGER-TERM CLIMATE CHANGE?

■ The anthropogenic climate change hypothesis ⁶

Climate change research took a bashing when the “climate-gate” scandal first broke in 2009. Then, academics and researchers were accused of not checking their facts thoroughly enough, although the overall message – that the world is getting warmer – was not changed as a result.

New research by the US National Oceanic and Atmospheric Administration was released in July 2010. The data clearly suggest rising human influence over Earth's climate, re-confirming the global warming hypothesis. Key findings are:

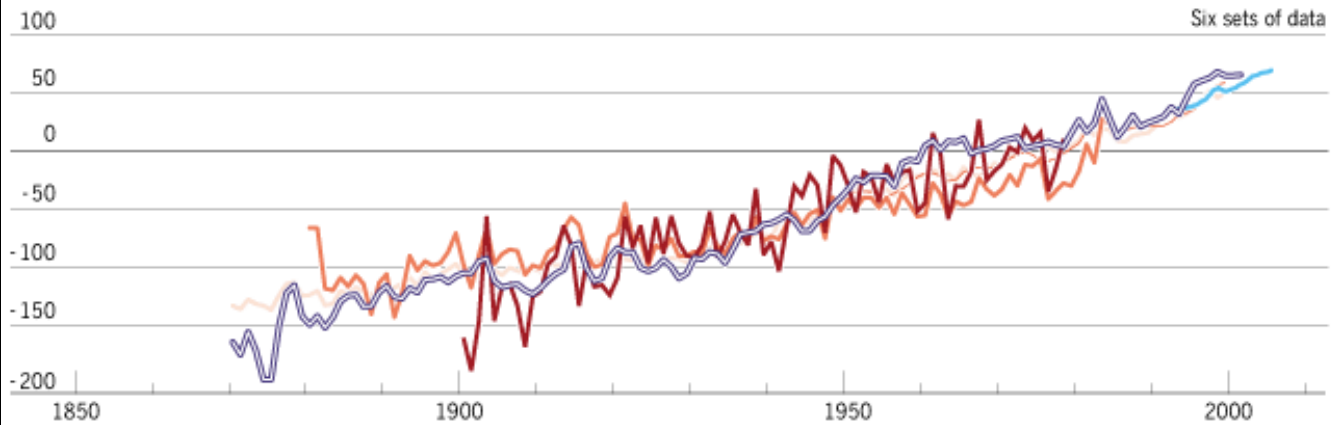
- Two pieces of new research have found that the first half of 2010 was the warmest on record (this refutes the claim of many climate sceptics that global warming has stopped or settled down over the past 10 years).
- Temperatures higher up in the stratosphere are *falling* - which has long been expected as a complex consequence of greenhouse gas increases (an increasing concentration of greenhouse gases causes the upper atmosphere to cool even as the lower atmosphere warms).

Activity: Practice question

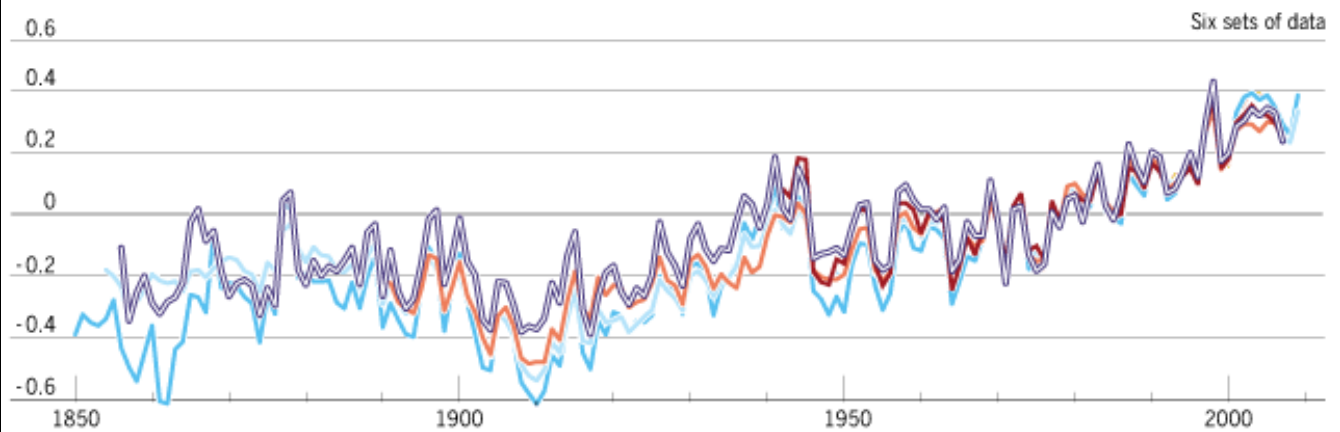
Study the climate change data shown on the next page. Explain how the changes shown could bring increased hydro-meteorological hazards to some places. (10 marks)

Signs of a warming world

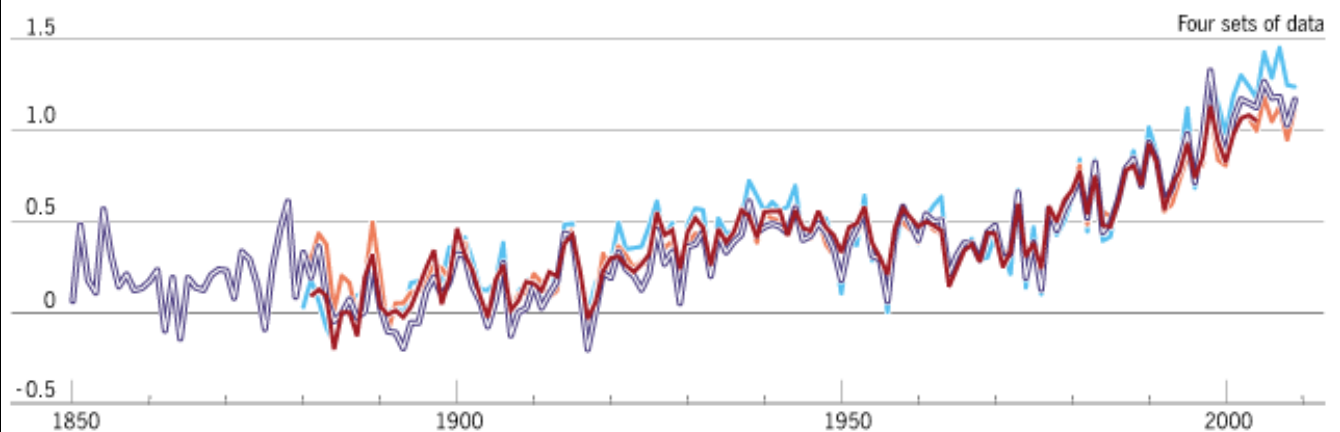
Sea level (mm)



Sea-surface temperature (°C)



Temperature over land (land surface air, °C)



Source: The Met Office

Lines represent independently collected sets of data

Source: Financial Times⁷

COPING WITH CLIMATE CHANGE: WHAT ARE THE STRATEGIES FOR CLIMATE CHANGE?

■ Mitigation innovation: solar-powered air flight⁸

Could aeroplanes one day fly without fossil fuel? If so, it would be an important step towards climate change **mitigation**. In 2010, a solar-powered aircraft flew for 26 hours using energy it had stored during the day. André Borschberg piloted an aircraft with 12,000 solar cells built into its wings that power four electric motors and batteries. The Swiss company who are developing the plane hope to fly round the globe in 2012.

■ Can mitigation efforts escape NIMBYism? 9

The EU has tried to lead the way in climate change mitigation by setting bold reduction targets. The UK, along with other EU nations, is looking for ways to build a sustainable low-carbon economy for itself. Such a strategy will also help protect countries from unpredictable energy prices. The EU has a target of 20 per cent reduction – but some politicians would like to see an even more ambitious low-carbon target of 30% reduction.

However, many low-carbon strategies still suffer delays due to NIMBYism. NIMBYism stands for ‘Not In My Backyard’. Local residents object to a proposal, such as an energy project, and prevent approval being given. Some industries are suffering with problems of public perception. Wind farms, nuclear power stations and waste treatment are three leading examples.

Numerous UK local authorities have also rejected attempts to generate low-carbon energy by burning rubbish. Only 3% of the UK’s alternative energy comes from using waste even though scientists have estimated that 15-20% of Britain’s energy could be generated from this source.

So what’s the problem? Waste-to-energy incinerators are unpopular with some environmentalists and local communities who fear airborne pollution. But those in favour of energy-from-waste say it addresses two of the problems currently faced in Britain. Firstly, a need for alternative fuel sources and secondly, a solution of what to do with rubbish as the country is running out of landfill sites. They deny that modern-day incinerators cause much airborne pollution.

UK government plans to respond to the global credit crunch with spending cuts – and this may also hinder mitigation. The energy and climate change department has a list of 37 energy projects in 2010 that are awaiting approval. Almost half of them are wind farms, 10 are gas-fired projects and six relate to the use of biomass. Before the credit crunch in 2008, decisions were often made on such projects within a year of the proposals being submitted. This is no longer the case.

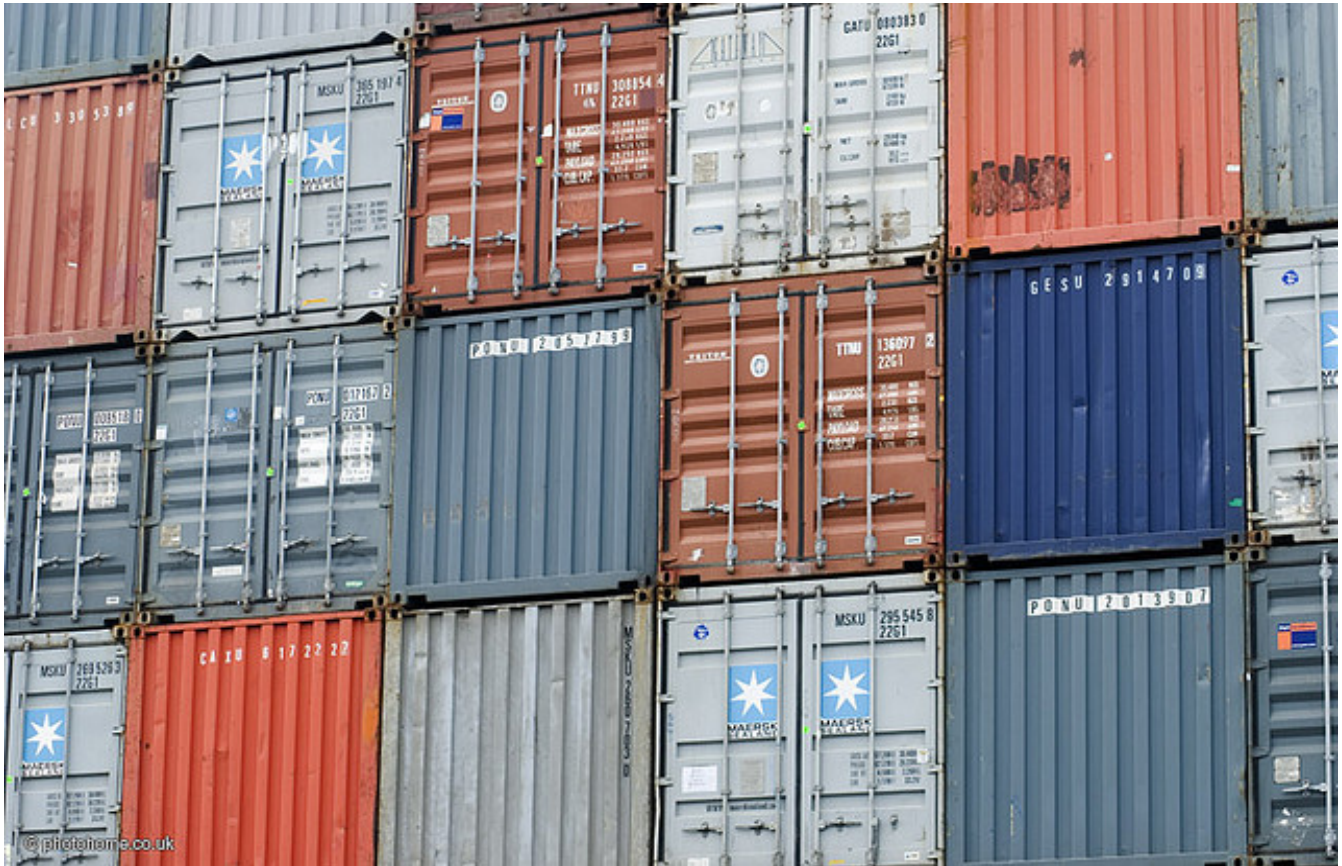
Discussion

Has the credit crunch jeopardised the world’s chance of tackling climate change before it is too late?
What do *you* think?

Going Global

WHAT IS GLOBALISATION?

■ Shipping containers are the “life-blood” of globalisation ¹⁰



While the internet is hugely important in the creation of **global networks**, another technology has a pretty convincing claim to be the “life blood” of globalisation: containers. Shipping containers are used to move the world’s manufactured goods to and from different places; more movement means more production and consumption is taking place.

The use of shipping containers is a barometer of how well the global economy is doing. This all-important **global flow** suffered during the 2008 global credit crunch but has now recovered, allowing global networks to fully operate again (services across the Pacific, between Asia and North America, saw an 11% increase in 2010; services to and from Latin America had an 18 % improvement).

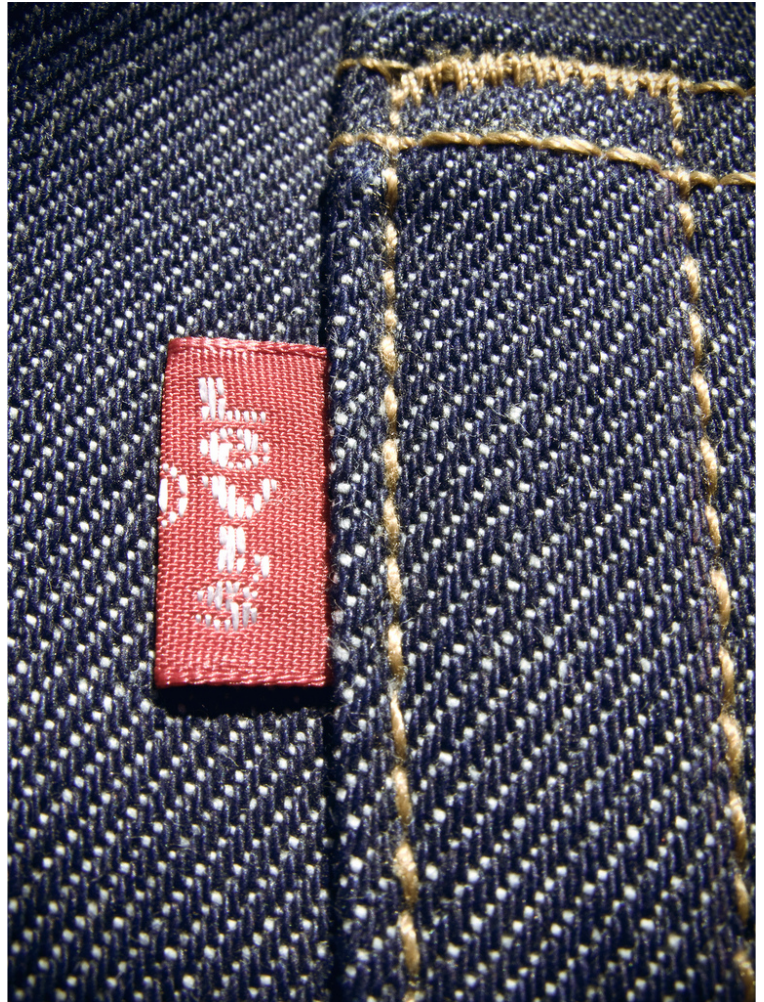
GLOBAL GROUPINGS: THE CRUCIAL ROLE OF TNCs

■ New evidence for glocalisation ¹¹

TNCs are increasingly embracing **glocalisation** – creating products specifically designed to appeal to the tastes of a particular local market.

- Levi’s, the “all-American” denim-manufacturing TNC, launched a new global brand called Denizen in Shanghai, China. The new five-pocket jeans are aimed at 18-29 year olds in emerging markets. Levi’s join an increasing number of western companies taking extra steps to appeal to the Asian markets, tailoring products specifically for those markets. Chinese consumers have complained to Levi’s that their hips are narrower, their bottoms neater and their legs not always as long as Westerners! So Levi’s has created a new range of slim fit jeans especially for its Chinese fans.

- Hermès, the French luxury-goods brand, has launched a new line of products which the company hopes will appeal to the Chinese consumer (China currently is the world's second-largest luxury goods market). The new Shang Xia brand has its own shops, selling tableware and furniture. According to a Hermès spokesman "It is a Chinese brand, developed in China with the Chinese team and broadly made in China."
- More western luxury brands have also designed specialised lines for the Asian markets - such as Burberry's Black and Blue Label which is sold exclusively in Hong Kong and Japan.
- The Japanese bathroom firm Inax has adapted its products for rich Chinese consumers. Traditionally, Japanese bathroom fixtures only come in black or white porcelain. However Inax has now designed porcelain thrones coated in real gold! The reason? The firm thinks that rich Chinese people have an appreciation for more "theatrical" decoration.
- Nissan is opening a car design studio in Beijing, which the firm hopes will create new car designs that are especially appealing to Chinese drivers.



Activity: Research

Working in small groups, research the glocalisation strategies for a well-known TNC. Present your findings using *PowerPoint* to the rest of your class.

GLOBAL NETWORKS

■ Global hubs are places where business clusters are often found ¹²

In recent years, geographers have been interested in the idea of business **clusters**: agglomerations of companies found in global hubs and well-connected places around the globe; the idea being that geographical proximity can enhance productivity in a particular sector. For example, there is a UK media cluster in Brighton; and a hi-tech cluster in Cambridge. The idea of the business cluster has had an increasing influence on regional development and corporate planning since the 1990s. Clustering encourages specialist recruitment and lessens supply chain costs. It also makes life easier for customers as they explore competitor options. This is not a new idea though – London was home to a financial cluster (the origins of the City) as early as the 16th Century.

ROOTS: HOW DOES EVIDENCE FROM PERSONAL, LOCAL AND NATIONAL SOURCES HELP US UNDERSTAND THE PATTERN OF POPULATION CHANGE IN THE UK?

■ The UK's population is increasingly ethnically diverse

In 2010 it was the case that on average across England new mothers of white British origin amounted to 69% of the total – a big change since the 1950s when the figure was close to 100%! However, the geographic pattern is highly variable: some local hospitals, especially in rural areas, still record an extremely high number of white British mothers. For instance the figure for North Devon is 97.4%. In contrast, the pattern is reversed in Northwest London: only 9.4% of births relate to white British mothers. White British women make up just one-third of those giving birth in the urban areas of South London, Bradford and Birmingham.

The figures confirm that ethnic diversity is now extremely common in UK cities and that the nation's ethnic minorities tend to live in a relatively small number of local urban districts (although recent eastern European migration has been more diffuse).

Question for discussion

What are the reasons why some ethnic groups, including eastern Europeans, are concentrated in particular areas? You should consider economic, social and cultural reasons.

GLOBAL CHALLENGES FOR THE FUTURE

■ The rainforest paper trail that leads to Tesco ¹³

Tesco is a major TNC that, according to its critics, buys paper products from a company that is destroying thousands of hectares of the Indonesian rainforest. By doing, so they are supporting the destruction of the habitat of the severely endangered Sumatran tiger. In contrast, Sainsbury's and Marks and Spencer have ceased trading with Asia Pulp and Paper (APP) due to their poor environmental record. APP's activities in the rainforest are also threatening the only project re-introducing the Sumatran orang-utan to its indigenous habitat.

REFERENCES

- 1 <http://www.ft.com/cms/s/0/c263e754-a0b7-11df-badd-00144feabdco.html>
- 2 Accompanies <http://www.ft.com/cms/s/0/c263e754-a0b7-11df-badd-00144feabdco.html>
- 3 <http://www.ft.com/cms/s/0/c468c7fc-a96a-11df-a6f2-00144feabdco.html>
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