

ALL YOU NEED TO KNOW ABOUT...



Geography

Case Studies

A WORK IN PROGRESS

Paper 1: Living With the Physical Environment

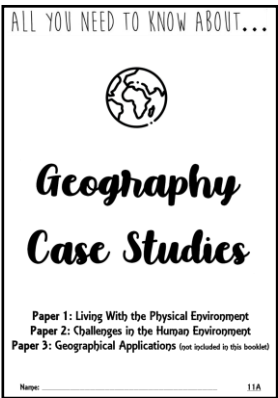
Paper 2: Challenges in the Human Environment

Paper 3: Geographical Applications (not included in this booklet)

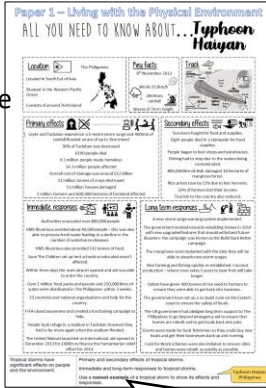
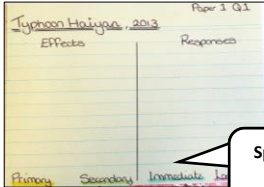
Name: _____

How to create a case study flashcard

Step 1: Decide which case study you're going to revise using the 'Everything you need to know case study booklet'. You may want to keep papers 1 and 2 on different coloured flashcards.

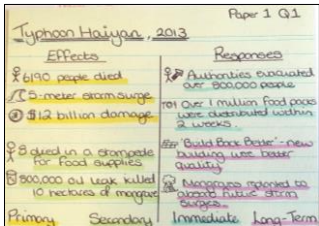


Step 2: Use the specification at the bottom of the page to pick out the key elements you need to revise. Use this to create the headings on your flashcard.

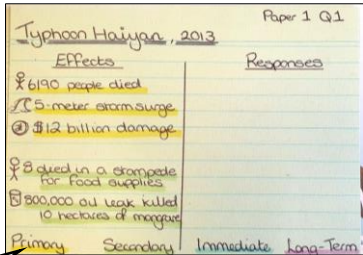


Specification Headings Notice how my headings use exact specification words and phrases.

Step 4: Keep your notes to one side of the flashcard. Use dual-coding to add some small images to help you remember key points. Double check the booklet and specification to ensure all key elements are included.

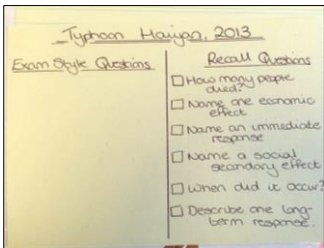


Step 3: Pick out a few key facts for each heading – choose ones you're most likely to remember, not just the shortest. Try and include a variety e.g. social/ economic/ environmental etc.

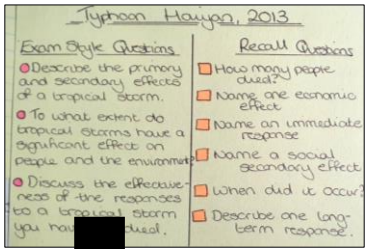


Use a key If things fit into categories, use a key to make this clear

Step 5: Split the back of your flashcard into two sections. On one side, write 3-5 recall questions that test your knowledge of this case study. The answer must be on the other side of the flashcard.



Step 6: On the other half of the back, write some exam style questions that you could be asked on this content. To do this, look back at the specification and pick out exact phrases. Combine them with command words to make exam style questions.



Step 8: Complete more flashcards for other case studies. You should aim to look back at older flashcards regularly as you make new ones, mixing up new and old topics as you go. This is called spaced practice.



Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT... Nepal, 2015

Location



Nepal is located in the continent of Asia

The earthquake's epicentre was located 37 miles North-West of the Capital city – Kathmandu

It happened because the Indian Plate collided with the Eurasian Plate.



Key facts

Saturday the 25th April 2015



11:26am

7.6 magnitude



Type of plate margin

At a **collision** plate margin two continental crusts move towards one another. This is a type of destructive plate margin



Primary effects



8841 people died and 6800 people were injured

1 million people were made homeless

26 hospitals were destroyed

50% of schools were destroyed

\$10 dollars worth of damage

Secondary effects



It triggered an avalanche on Mount Everest that swept through the Everest base camp.

19 people were killed – 7 were tourists the rest were native Sherpas

Landslides occurred in the Langtang valley

Landslide blocked Kali Gandaki River increasing flood risk



Immediate responses



International aid was provided by India and China who in total committed over \$1 billion to help support Nepal

The UK offered help and support. Over 100 search and rescue responders, medical experts, and disaster and rescue experts were sent together with three Chinook helicopters for use by the Nepali government.

The GIS tool "Crisis mapping" was used to coordinate the response.

Aid workers from charities such as the Red Cross came to help.

Temporary housing was provided, including 'Tent city' in Kathmandu.

Long term responses



A new government taskforce was created to help deal with future earthquakes.

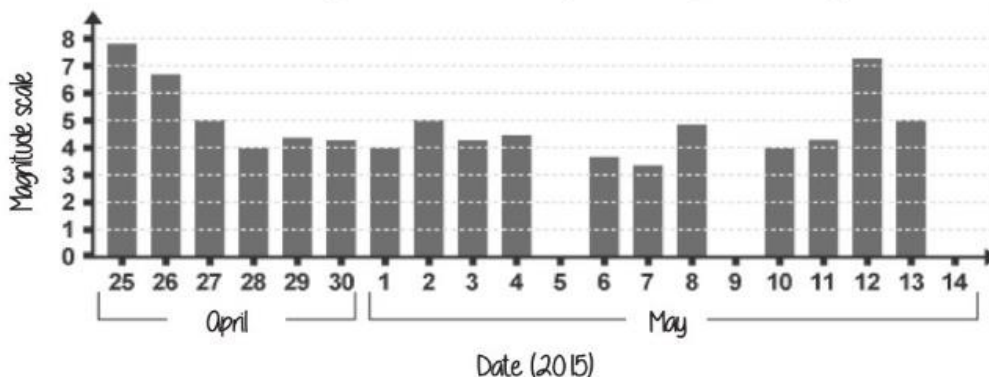
Areas were zoned to assess damage.

People are now being educated across Nepal to do earthquake drills.

The Government of Nepal is trying hard to reduce poverty so that people can build homes and structures which could withstand earthquakes.

The Asian Development Bank provided a \$3 million grant to Nepal for immediate relief efforts, and up to \$200 million for the first phase of rehabilitation.

The largest recorded earthquakes in Nepal Each Day



Data excludes earthquakes with a magnitude lower than 2.5

Aftershocks from the Earthquake

Almost every day for the three weeks that followed, aftershocks were reported across the region.

Almost one in three were a magnitude of five or higher.



The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.

Primary and secondary effects of a tectonic hazard.


Immediate and long-term responses to a tectonic hazard.



Use **named examples** to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth.



New Zealand (HIC)
Nepal (LIC)

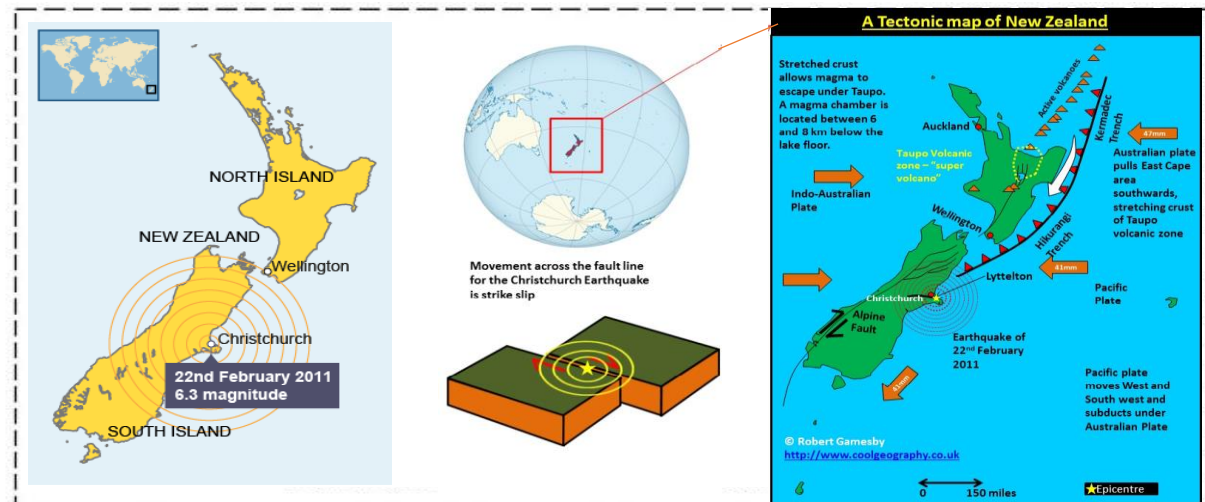
Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT.. Christchurch, New Zealand, 2011

| | | |
|--|--|---|
| <p><u>Location</u></p> <p>New Zealand is located in Oceania.</p> <p>Christchurch is on New Zealand's southern Ireland.</p>  | <p><u>Key facts</u></p> <p>22nd February 2011</p> <p>12:51pm</p> <p>6.3 magnitude</p> | <p><u>Type of plate margin</u></p> <p>New Zealand lies on a conservative plate margin between the Pacific Plate and the Australasian Plate.</p> |
|--|--|---|

| | |
|---|--|
| <p><u>Primary effects</u></p>  <p>185 people killed and over 6600 injured</p> <p>Water and sewage pipes were damaged which contaminated water</p> <p>Over ½ of the city's building were damaged</p> <p>Liquefaction occurred</p> | <p><u>Secondary effects</u></p>  <p>Schools and businesses were closed</p> <p>Large aftershocks hit Christchurch less than 4 months after the earthquake causing further damage</p> <p>Damage cost an estimated \$28 billion (USD)</p> <p>2,200 people were moved to temporary housing</p> <p>Local transport services were heavily disrupted e.g. trains and buses</p> |
|---|--|

| | |
|---|--|
| <p><u>Immediate responses</u></p>  <p>\$6-7 million was provided in international aid</p> <p>30,000 chemical toilets were provided to residents</p> <p>Charities including the Red Cross provided relief workers.</p> <p>Rescue crews from all over the world, including the UK, USA, Taiwan and Australia, provided support</p> | <p><u>Long term responses</u></p>  <p>Water and sewage systems were restored by August 2011</p> <p>10,000 affordable homes were built</p> <p>People across New Zealand are now educated though drills on what to do in an earthquake</p> <p>\$24 billion paid out in insurance claims</p> <p>Canterbury Earthquake Recovery Authority was created to organise rebuilding the region. It had special powers to change planning laws and regulations.</p> |
|---|--|



The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.

Primary and secondary effects of a tectonic hazard.




















Immediate and long-term responses to a tectonic hazard.

Use **named examples** to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth.

New Zealand (HIC)
Nepal (LIC)

Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT... *Typhoon Haiyan*

| | | |
|--|---|---|
| <h3>Location</h3>  <p>The Philippines</p>  <p>Located in South East of Asia</p> <p>Situated in the Western Pacific Ocean</p> <p>Consists of around 7641 island</p> | <h3>Key facts</h3> <p>8th November 2013</p>  <p>Winds 313km/h</p>  <p>2819mm rainfall</p>  <p>Waves of 7m in height</p> | <h3>Track</h3>  |
| <h3>Primary effects</h3>     <p>Leyte and Tacloban experience a 5-metre storm surge and 400mm of rainfall flooded an area of up to 1km inland</p> <p>90% of Tacloban was destroyed</p> <p>6190 people died</p> <p>4.1 million people made homeless</p> <p>14.1 million people affected</p> <p>Overall cost of damage was around \$12 billion</p> <p>11 million tonnes of crops destroyed</p> <p>11 million houses damaged</p> <p>1 million farmers and 600,000 hectares of farmland affected</p> | <h3>Secondary effects</h3>    <p>Survivors fought for food and supplies.</p> <p>Eight people died in a stampede for food supplies.</p> <p>People began to loot shops and warehouses.</p> <p>Fishing had to stop due to the waters being contaminated.</p> <p>800,000 litre oil leak damaged 10 hectares of mangrove forest.</p> <p>Rice prices rose by 12% due to lost harvests.</p> <p>3/4s of farmers lost their income.</p> <p>Tourism to the country also reduced.</p> | |
| <h3>Immediate responses</h3>    <p>Authorities evacuated over 800,000 people</p> <p>HMS Illustrious assisted about 40,000 people – this was also able to process fresh water leading to a decline in the number of waterborne diseases.</p> <p>HMS Illustrious also provided 142 tonnes of food.</p> <p>Save The Children set up tent schools so education wasn't affected.</p> <p>Within three days the main airport opened and aid was able to enter the country.</p> <p>Over 1 million food packs and parcels and 250,000 litres of water were distributed in The Philippines within 2 weeks.</p> <p>33 countries and national organisations sent help for the country.</p> <p>FIFA raised awareness and created a fundraising campaign to help.</p> <p>People took refuge in a stadium in Tacloban however they had to move again when the stadium flooded.</p> <p>The United Nations launched an international aid appeal in December 2013 for £480m to finance the humanitarian relief effort for 2014.</p> | <h3>Long term responses</h3>    <p>A new storm surge warning system implemented.</p> <p>The government worked towards rebuilding homes in 2014 with new upgraded features that should withstand future disasters- the campaign was known as the Build Back Better campaign.</p> <p>The mangroves were replanted with the idea they will be able to absorb new storm surges.</p> <p>Rice farming and fishing quickly re-established. Coconut production – where trees take 5 years to bear fruit will take longer.</p> <p>Oxfam have given 400 tonnes of rice seed to farmers to ensure they were able to get back into business.</p> <p>The government have set up a no build zone on the Eastern coast to ensure the safety of locals.</p> <p>The UK government had pledged long term support to The Philippines to go beyond emergency aid to ensure that homes are rebuilt and to get locals back into jobs.</p> <p>Grants were made for local fishermen so they could buy new boats and get their businesses back up and running.</p> <p>Cash for Work schemes were also initiated to ensure cities and homes were rebuilt as quickly as possible.</p> | |

Tropical storms have significant effects on people and the environment.

Primary and secondary effects of tropical storms.

Immediate and long-term responses to tropical storms.

Use a named example of a tropical storm to show its effects and responses.

Typhoon Haiyan, Philippines

Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT... **Calderdale Floods, 2015**

Background

- The Calder Valley has a long history of flooding
- Rainfall of up to 120mm (5 inches) fell in the 24 hours period around 26th December in the Lancashire and Yorkshire areas. To put this into context, average rainfall for December for the entire month is 145mm
- The intense rainfall in a short period of time on already saturated ground led to rapid run off into the river system
- The regularity and scale of flooding appears to have increased since 2000 with several smaller floods between 2000 and 2011.



Primary Impacts

No deaths or serious injuries!

Flooding affect locations from Todmorden to Brig-house along a 20 mile stretch of the River Calder

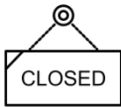
Over 1600 businesses affected by flooding

45% of flooded premises suffered structural damage

Over 2,800 houses were affected by the flooding

8 Schools flooded and had to relocate their pupils for an extended period. 1 school for more than 1 year.

10 sewage pumping stations affected by flooding, which could have negatively affected the environment.



Secondary Impacts

Nearly £47 million losses to the local economy
124 bridges needed inspecting for damage

Hundreds of homes and businesses have become uninsurable

The total amount of losses reported by the surveyed businesses is almost £47 million

Many home owners could not return to their properties for over a year

75% of flooded businesses lost stock, 46% of flooded businesses lost office equipment

The total economic impact to the Calderdale and Kirk-les regional economy amounted to a total of approximately £170 million



Social

Economic

Environmental

Responses



£3.1 million raised by charities in the local area to help those who needed it

3,000 hours spent removing debris and 2,500 tonnes of waste collected from affected areas

A Borough wide radio network was purchased



An advertising campaign was launched to help bring visitors back to the valley and to show that shop were open

57 special 1 tonne (large) sand bags deployed

£35 Million Grant from the Government to develop flood defence programmes

Elland Bridge took over a year and £5.5 Million to repair

600 soldiers deployed to help with the clean up



Extreme weather events in the UK have impacts on human activity.

An **example** of a recent extreme weather event in the UK to illustrate:

- causes
- social, economic and environmental impacts
- how management strategies can reduce risk.

Calderdale
Floods, 2015

Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT... The Amazon

Location

It sits within the Amazon River basin

It covers 40% of the South American continent

It is in 8 countries including Brazil, Bolivia, Peru, Ecuador and Colombia.

Nearly 2/3s is found in Brazil



Key facts

The Amazon is the World's biggest rainforest.

The Amazon is thought to have 25 million species of insects.

More than half of the species in the Amazon Rainforest are thought to live in the canopy.

70% of South America's GDP is produced in areas that receive rainfall or water from the Amazon.

Causes of deforestation



Subsistence and commercial farming: Farmers stay on the same land and attempt to farm for years. Nutrients in the soil quickly run out. It becomes infertile and nothing will grow. 70% of deforestation in the Amazon was caused by commercial farming between 2000 & 2005. Logging: - 2-3% of deforestation was caused by logging between 2000-2005.

Road Building: The Trans-Amazonian Highway was built in 1972 and is 5,000 km long. This destroyed a massive amount of rainforest. Research has shown that 95% of deforestation occurs within 7km of a road.

Mineral extraction: the mining of iron ore, bauxite, gold, oil and other minerals have benefitted Brazil, however, it has also devastated large areas of the Amazon Rainforest.

Energy development: An unlimited supply of water and ideal river conditions have led to the development of hydro-electric power stations (HEP Stations).

Population growth and settlement: transmigration from urban to rural areas has been encouraged by the government. This means that more areas have had to be developed as settlements.

Impacts of deforestation



With no trees to hold the soil together, heavy rain falls wash away the soil. As the tree canopy has gone, more water reaches the forest floor and washes away the nutrient in the soil.

Brazil is losing 55 million tonnes of top soil a year due to soil erosion caused by soy farming.

The Amazon stores around 100 billion tonnes of carbon. As trees are cut down, this carbon is released into the atmosphere as carbon dioxide and contributes to global warming.

When vegetation is burnt to clear forest areas, this produces even more carbon dioxide into the atmosphere.

Deforestation has brought a lot of wealth to countries that are poor meaning that they can become more developed and improve their infrastructure.

Animal Adaptations



The sloth - uses camouflage and moves very slowly to make it difficult for predators to spot.

The spider monkey - has long, strong limbs to help it to climb through the rainforest trees.

The flying frog - has fully webbed hands and feet, and a flap of loose skin that stretches between its limbs, which allows it to glide from plant to plant.

The toucan - has a long, large bill to allow it to reach and cut fruit from branches that are too weak to support its weight.

Plant Adaptations



Lianas - these are woody vines that have roots in the ground but climb up the trees to reach the sunlight. Their leaves and flowers grow in the canopy.

Tree trunks - The bark on these trees is smooth to allow water to flow down to the roots easily.

Drip tips - plants have leaves with pointy tips. This allows water to run off the leaves quickly without damaging or breaking them.

Buttress roots - large roots have ridges which create a large surface area that help to support large trees.

Deforestation has economic and environmental impacts.

Changing rates of deforestation.

A case study of a tropical rainforest to illustrate:

- causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth
- impacts of deforestation – economic development, soil erosion, contribution to climate change.

Amazon Rainforest, South America

Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT **Freshwater pond ecosystem**

Interrelationships



Key components

Freshwater pond ecosystems consist of different **organisms** that produce and transfer **energy** through the system.

Producers



Producers are organisms that **convert energy** from the **environment** (mainly sunlight) into **sugars** (glucose).

Algae and microscopic plants are examples of producers in the freshwater pond ecosystem. They **convert energy** from the **sun** into **glucose** via **photosynthesis**.

Consumers



Consumers are organisms that receive energy from **consuming** (i.e. eating) **living organisms**.



Consumers may **eat producers**, and receive energy from the **sugars** made by producers (e.g. midge larvae eat algae).



However, some consumers receive energy by eating **other consumers** (e.g. a fish may eat midge larvae - another consumer).

Primary consumers are organisms that eat **producers**. **Secondary consumers** are organisms that eat **primary consumers**.

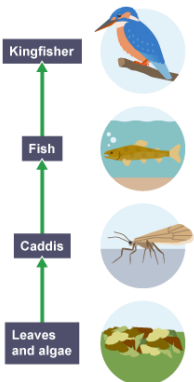
Decomposers



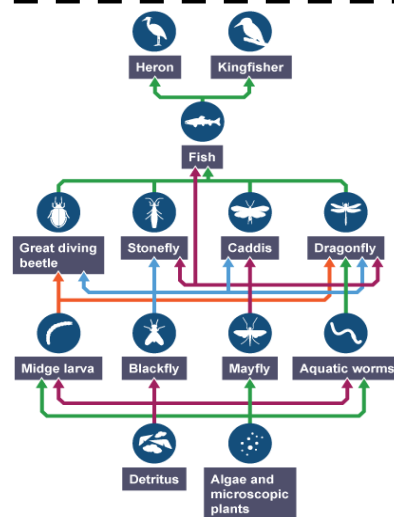
Decomposers **break down organic material** (e.g. dead plants and animals or faeces) and release the **nutrients** from this organic material into the **soil**. These nutrients are **absorbed by plants** when they grow.

Bacteria, worms and maggots are examples of decomposers in a freshwater pond.

Food chains and food web



A food chain shows how each living thing gets food. In a food chain, energy and nutrients are passed from one organism to the next. The producer provides the basic source of food which other organisms, the consumers, then feed on.



The food web includes all of the connections between producers and consumers in an ecosystem. The food web shows how interconnected all of the different organisms are.

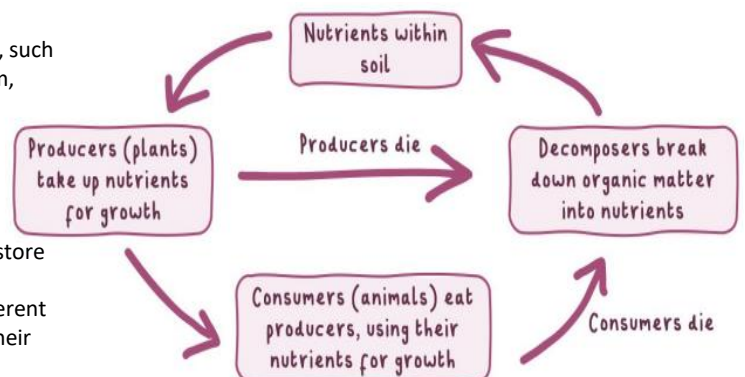
Within a freshwater pond, there are many possible flows of energy around an ecosystem, showing how one species is dependent on many others.

Nutrient Cycling

Nutrients are substances that fuel plant and animal growth, such as nitrates and phosphates. In a freshwater pond ecosystem, nutrient come from different sources:

- Rocks and minerals are weathered which releases nutrients into the soil
- Chemicals in the atmosphere can be washed out with precipitation
- Special bacteria can absorb chemicals from the air and store them in soil.

Nutrients are transferred throughout the ecosystem in different ways. Animals and plants die, and decomposers break up their organic matter, recycling the nutrients back into the soil.



3.1.2.1 Ecosystems

| Key idea | Specification content |
|--|--|
| Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components. | An example of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling. |

Freshwater Pond, UK

ALL YOU NEED TO KNOW ABOUT... *The Thar*

Location

It stretches across north-west India and Pakistan

Covers an area of about 200,000 square km

Mostly in the Indian state of Rajasthan



Climate and vegetation

Rainfall in the Thar Desert is low – typically between 120 and 240mm per year

Summer temperatures in July can reach 53°C

The soils are generally sandy and not very fertile



Clumps of thorn forest vegetation



Opportunities in the desert



Scientists at the Central Arid Zone Research Institute have developed a hard breed of plum tree called the Ber tree. It produces large fruits and can survive in low rainfall conditions. The fruits can be sold and there is potential to make a decent profit.

The main form of irrigation in the desert is the Indira Gandhi Canal constructed in 1958. It has a total length of 650km. Two of the main areas to benefit centred on the city of Jodhpur and Jaisalmer, where over 3,500km² of land is irrigated.

The desert region has valuable reserves of gypsum (used in making plaster for the construction industry and in making cement), feldspar (used to make ceramics) and kaolin (used as a whitener in paper).

A popular tourist destination. Desert safaris on camels, based at Jaisalmer, have become particularly popular. Local people benefit by acting as guides or rearing and looking after camels.

Challenges in the desert



Thar Desert is the most densely populated desert in the world, with a population density of 83 people per km², and the population is increasing. This is putting extra pressure on the fragile desert ecosystem.

Water management – excessive irrigation in some places has led to waterlogging of the ground. Where this has happened, salts poisonous to plants have been deposited on the ground surface.

Soil erosion – over-cultivation and overgrazing have damaged the vegetation in places, leading to soil erosion by wind and rain. Once eroded away, the soil takes thousands of years to re-form.

Although tourists bring benefits such as employment and extra incomes, the environment that they enjoy is fragile and will suffer if tourism becomes overdeveloped.

Sustainable management



In 1977 the government-funded Desert Development Programme was started. Its main aims are to restore the ecological balance of the region by conserving, developing and harnessing land, water, livestock and human resources. In Rajasthan, it has been particularly concerned with developing forestry and addressing the issue of sand dune stabilisation.

The sand dunes in the Thar Desert are very mobile. In some areas they form a threat to farmland, roads and waterways. Various approaches have been adopted to stabilise the sand dunes, including planting blocks of trees and establishing shelterbelts of fences and trees alongside roads and canals.

- development opportunities in hot desert environments: mineral extraction, energy, farming, tourism
- challenges of developing hot desert environments: extreme temperatures, water supply, inaccessibility.

ALL YOU NEED TO KNOW ABOUT **An area of UK Coastline: The Holderness Coast**


Background

A range of classic coastal features stretch over 50km, from the chalk cliffs of Flamborough, through the plain of Holderness, to Spurn Head where a large spit guards the entrance to the Humber estuary. The combination of clay geology and a high-energy environment has helped make this part of the Yorkshire coast one of the most rapidly eroding coastlines in Europe. Historical records show that some twenty-nine villages have fallen into the sea since Roman times



Landforms of Erosion and Deposition


Flamborough Head
This chalk headland is more resistant to erosion than the boulder clay further south. This causes landforms such as caves, arches stacks and stumps to form, as well as features such as a wave cut platform and wave cut notches.





Bridlington Beach
In the shelter created by the headland, constructive waves have created beaches such as the ones found in Bridlington.



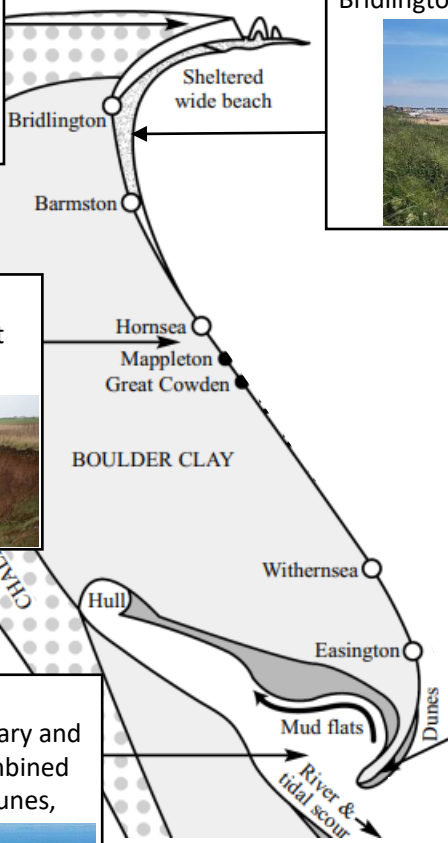
Holderness Cliffs
Where no coastal defences exist, the soft boulder clay is exposed, leaving easily eroded cliffs such as those at Mappleton. This boulder clay is highly prone to slumping.



Humber Estuary
The mouth of the River Humber forms an estuary and here, wind, tides and river processes have combined to create landforms and ecosystems such as dunes, mudflats and saltmarsh.



This river is also the reason Spurn Head will never become a bar, as the constantly moving river water erodes the tip of the spit.



Spurn Head
Sediments brought here by longshore drift are deposited where the winds, waves and the river estuary have created a large but fragile recurved spit.



| | |
|------------------------|--|
| Landform of erosion | |
| Landform of deposition | |

Distinctive coastal landforms are the result of rock type, structure and physical processes.

An example of a section of coastline in the UK to identify its major landforms of erosion and deposition.

Holderness

Coastal Realignment Scheme

Location



This flat, low-lying coastal area is mainly used for farming and caravan parks. For many years the land was protected by a low sea wall but this is now in need of repair. Building a new sea wall to protect the area against future sea-level rise was a very expensive option.

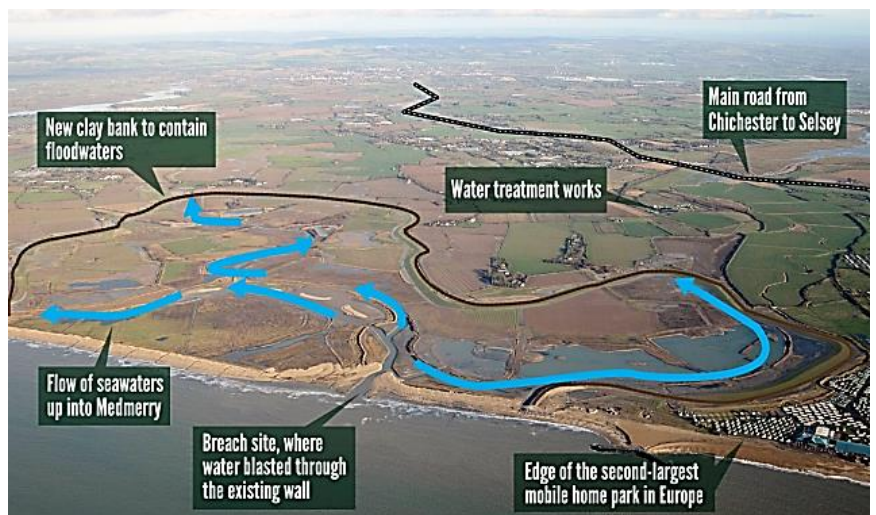


Reasons for Strategy

Given the relatively low value of the land, it was decided to allow the sea to breach the current sea defences and flood some of the farmland that was previously protected.

What did they do?

The Medmerry scheme cost £28 million and the controlled breaching of the old sea defences took place in November 2013. In the future the scheme will create a large natural saltmarsh to form a natural buffer to the sea, help to protect the natural surrounding farmland and caravan parks from flooding and establish a valuable wildlife habitat and encourage visitors to the area.



Effects and Conflicts

Selsey now has a 1 in 1000 chance of coastal flooding which provides the best level of protection for people living in coastal zones in the UK. Tourism, a main contributor to the local economy is expected to increase. Two new car parks and four viewing points give easy access. The saltmarsh vegetation will also be used for extensive cattle farming, to produce expensive saltmarsh beef.

At £28 million, the scheme was very expensive in comparison to the sea wall that cost £0.2 million a year to maintain. Despite planning, habitats of existing species such as badgers would have been disturbed.



An example of a coastal management scheme in the UK to show:

- the reasons for management
- the management strategy
- the resulting effects and conflicts.

Medmerry Coastal Realignment Scheme

We have also visited Hornsea as part of our fieldwork so if you were struggling in the exam you could use this as an example instead.

Paper 1 – Living with the Physical Environment

ALL YOU NEED TO KNOW ABOUT... A Glacial Landscape: The Lake District

Background

The Lake District is England’s largest National Park covering 2,362km²

The geology of the Lake District is a mix of sandstone, limestone, slate and igneous rock such as granite.

Over the last 500million years, geological and glacial processes have created a physical landscape of mountains and lakes, including England’s highest mountain (Scafell Pike).



Landforms of Erosion and Deposition

| | |
|------------------------|--|
| Landform of erosion | |
| Landform of deposition | |

Swirral Edge


An arête, like Swirral Edge near Helvellyn, is a narrow ridge of land that is created when two corries erode back to back.

Red Tarn

Red Tarn is a small lake in the eastern region of the English Lake District, and is high up on the eastern flank of Helvellyn mountain. Due to the high numbers of glaciers in this area, Red Tarn is surrounded by arêtes.

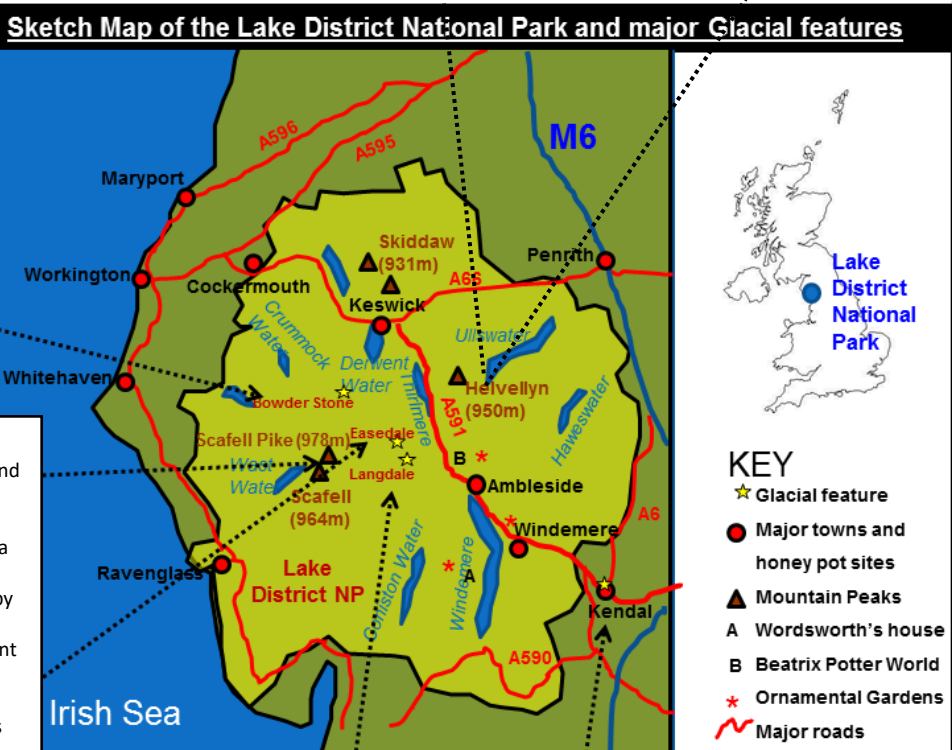
The Bowder Stone

Just south of Derwent water you will find the Bowder Stone. The Bowder Stone is a big rock. A really big rock. Six times the height of a person, the reason it beguiles travellers to the Lakes is the fact that it is balanced improbably on one edge.



Ribbon Lakes

Ribbon Lakes are many in the Lake District and these are long and narrow (like a ribbon), which form when a glacier flows over alternate bands of hard and soft bedrock in a glacial trough. The debris trapped in the bottom of the glacier erode the softer rock by abrasion far more quickly than the harder rock, creating a rock basin with more resistant rock either side which has been eroded less. Rainwater can collect in these rock basins after the climate has warmed, which creates the ribbon lake.



Easedale


Here in the Easedale Valley you can find a variety of glacial landforms and features including corries and moraines.

Langdale

Langdale Valley is a great example of the power of a glacier. As the glacier moved down through this valley it scoured the area, creating a U-shaped valley. There’s even a hanging valley near Bleaberry Tarn!

Drumlins

South East of Kendal, glacial features called drumlins can be found.



ALL YOU NEED TO KNOW ABOUT **Tourism in a Glacial Landscape: The Lake District**

Factfile

The Lake District is England’s largest National Park covering 2,362km²

It was declared a UNESCO World Heritage Site in 2017, giving it legal protections under international treaties.

It is home to a wide range of birds and animals including tawny owls, foxes, badgers and deer.

Tourist Attractions

The Lake District ‘s beautiful scenery, rugged mountains (e.g. Scafell Pike) and tranquil lakes (e.g. Windermere) attract over 18 million visitors a year.

Its vast forests offer great opportunities for walking and birdwatching. Also its cultural attractions, such as the Wordsworth Museum, and range of outdoor activities are big pull factors for tourists.



Impacts of Tourism

Economic Impacts

⚡ Tourism contributes over £1.46 billion a year to the local economy, supporting businesses and creating over 16,000 jobs.

However, tourism also brings challenges though, for example:

- ⚡ Most jobs are seasonal or part time
- ⚡ Incomes are relatively low at less than £27,000 per household
- ⚡ Due to demand for holidays homes, house prices are high. For example, the average home in Grasmere is worth around £500,000

Environmental Impacts

🌍 Money from tourists can be used to conserve and protect areas of wildlife.

However, tourism also has large-scale damaging effects on the environment. For example:

- 🌍 Walkers erode footpaths, causing damage to surrounding areas.
- 🌍 Discarded litter can be hazardous to birds and animals
- 🌍 Noisy water sports on Windermere may frighten wildlife.
- 🌍 Vehicles parking on verges churn up soil, destroying vegetation.

Social Impacts

👤 Local residents can benefit from access to many tourist leisure facilities and some extra public transport routes, especially in the high season.

However, tourism also causes...

- 👤 Increased traffic which can block the narrow roads to the M6
- 👤 The needs of tourists are often prioritised over those of residents
- 👤 Traditional shops have been replaced by global businesses and franchises catering to the needs of tourists over locals.

Sustainable Management Strategies



Improving parking

In some areas, school yards become weekend and out-of-term car parks.

Porous pavers have helped to reinforce grass car parks

Controlled parking zones help to create a high turnover of vehicles.

Reducing traffic congestion

Nurture Lakeland launches a Drive Less See More campaign to encourage visitors to explore the area without a car

The Go Lakes Travel scheme works to improve public transport, cycling and other more sustainable modes of travel.

Reducing footpath erosion

Footpaths are reinforced and rebuilt by Fix the Fells, backed by the National Trust

The Fells Futures Apprenticeship Scheme trains people in footpath and wall maintenance.

Protecting the environment

Educational posters and leaflets teach tourists how to respect the area – for example by not littering.

At Windermere, speed limits of 10 knots were introduced, and water sports have been limited to certain zones.

Glaciated upland areas provide opportunities for different economic activities, and management strategies can be used to reduce land use conflicts.

An **example** of a glaciated upland area in the UK used for tourism to show:

- the attractions for tourists
- social, economic and environmental impacts of tourism
- strategies used to manage the impact of tourism.

The Lake District

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... Lagos,

Nigeria

Location & Importance

Located on the South West coast of Nigeria, Lagos has a large port & many industries have set up around the water.

Was the capital city until 1991.

Major transport hub

80% of Nigeria's industry is in Lagos

Lots of African companies have their headquarters in Lagos

Hosted major events such as the African Cup of Nations

Reasons for Growth

Rural-urban migration – people have moved from the countryside to Lagos due to poor conditions in rural areas. (push and pull factors)

Natural change – Lagos has a young population, many of whom are now having children which creates a high birth rate.

Opportunities

Social:



Access to safe water / energy - Lagos Water Corporation claims to supply 12million people with safe water.



Healthcare - In Lagos, healthcare is better than in the countryside, with better access to doctors, hospitals and clinics.



Education - Lagos State Government operates free schools offering basic education for children up to 9.

Economic:



Improved economic development - Lagos is the largest & wealthiest city in Nigeria and has made a big contribution to the country's economic development



Employment - More jobs are available in Lagos than anywhere else in Nigeria (both in the formal and informal sectors)

Challenges Crime - There are issues of muggings and assault by gangs called 'Area Boys' who often clash violently.



Unemployment - There are not enough formal jobs for all migrants so people work informally e.g. scavenging in the Olusosun dump for things to sell

Traffic Congestion - It can take up to 2 hours to travel in the city in the rush hours known as 'go slow'



Education - There are few primary schools in the slums and it can be expensive. For some families it is unaffordable.

Sanitation - There are no sewage systems and raw sewage is ejected into the lagoon causing health problems such as cholera.



Housing - Houses in the shanty towns such as Makoko are made of flimsy materials and are built on stilts in the lagoon.

Urban growth creates opportunities and challenges for cities in LICs and NEEs.

A case study of a major city in an LIC or NEE to illustrate:

Lagos, Nigeria

- the location and importance of the city, regionally, nationally and internationally
- causes of growth: natural increase and migration
- how urban growth has created opportunities:
 - social: access to services – health and education; access to resources – water supply, energy
 - economic: how urban industrial areas can be a stimulus for economic development
- how urban growth has created challenges:
 - managing urban growth – slums, squatter settlements
 - providing clean water, sanitation systems and energy
 - providing access to services – health and education
 - reducing unemployment and crime
 - managing environmental issues – waste disposal, air and water pollution, traffic congestion.

Paper 2 – Challenges in the Human Environment

Nigeria's

Urban Planning

Makoko Location & Features

Urban planning in Lagos is incredibly challenging as its population increases by over 600,000 people each year. One solution is to take advantage of the vast area of water that surrounds Lagos by creating new floating communities. Already, squatter settlements like Makoko are built on stilts on the edge of Lagos Lagoon.



Urban Planning

Urban planning is the strategies done by the government and other organisations to improve the standard of living and quality of life of the people living there.

For each of the challenges that Lagos faces there are a number of ways urban planning can help. Some of these schemes have been successful whereas others have had little success, no success or have only been successful in certain areas of the city. You will need to be able to evaluate the success of each one.

Challenges

Urban Planning Strategies

Success?



Lagos Authority has bought three police helicopters for police to spot and act on criminal activity.



Promote investment from TNCs to create more industry in Lagos therefore providing more jobs. Also, regulate the informal sector.



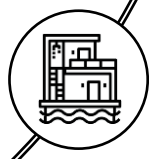
The Strategic Transport Master Plan includes more ferries, better roads, and improved walking and cycling facilities.



Makoko Floating School provides slum residents in Makoko with access to education and will be able to cope with rising sea level.



Lagos State Regulatory Commission began regulating water in 2012 to ensure it is not contaminated by sewage.



Floating communities are a potential solution to the housing shortage and can be made to be sustainable.



Paper 2 – Challenges in the Human Environment

London,

UK

Location & Importance

London is located in the South-East of the UK and is the UK's most prosperous city. As the UK's capital, it is home to many government offices such as the Houses of Parliament. Established by the Romans on the mouth of the River Thames. Largest and wealthiest city in the UK with 10% of the population. Home to the London Stock Exchange. International centre for education.

Reasons for Growth

London's population is over 8.5 million and this number is projected to grow. This is as a result of:

National migration – people move to London from within the UK for employment.

International migration – $\frac{1}{3}$ of London's population was born abroad, moved to London for work or education.

Natural Increase – most migrants are between 20 and 30. Youthful population means higher birth rate.

Opportunities

Social

Cultural diversity - London offers a mix of cultures, cuisines, entertainment and religion.

Recreation and Entertainment - London has a huge variety of sports and music venues. Areas like Shoreditch are thriving hubs of galleries, cafes and bars.

Transport - London has an integrated network of Tube lines, trains and buses. All of these can be paid for using the Oyster system.

Economic

Employment - London has always had more job opportunities than the rest of the UK, especially in the service sector. Factories on the outskirts of the city also offer employment opportunities.

Environmental

Urban greening – The Greener City Fund is a £9 million fund that aims to make 50% of London green by 2050 by improving green spaces and planting trees.

Challenges

Urban deprivation – more than $\frac{1}{4}$ of London's population live below the poverty line. In inner city London, declining industry and poor housing conditions have led to significant deprivation.

Brownfield sites and waste disposal – around 25% of London's waste goes to landfill and air pollution is high due to traffic congestion. In addition, industrial decline has forced many inner-city factories to close leaving large areas of land derelict and in some cases, polluted.

Inequalities in housing – house prices in London are rising faster than anywhere else in the UK and affordable housing is often in poor condition.

Inequalities in education and employment – students in poorer areas of London leave schools with fewer qualifications leading to high levels of unemployment and lower wages.

Inequalities health – women in Kensington can expect to live to 86 whereas those in the less wealthy borough of Dagenham have a life expectancy of 82.

A case study of a major city in the UK to illustrate:

- the location and importance of the city in the UK and the wider world
- impacts of national and international migration on the growth and character of the city
- how urban change has created opportunities:
 - social and economic: cultural mix, recreation and entertainment, employment, integrated transport systems
 - environmental: urban greening
- how urban change has created challenges:
 - social and economic: urban deprivation, inequalities in housing, education, health and employment
 - environmental: dereliction, building on brownfield and greenfield sites, waste disposal
 - the impact of urban sprawl on the rural-urban fringe, and the growth of commuter settlements.

London, UK



Urban change in cities in the UK leads to a variety of social, economic and environmental opportunities and challenges.



Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... Regeneration in the Lower Lea Valley

Location



North of the River Thames.

In Stratford, London.

North of the London Docklands.



The Location of the Olympic Park in London

Definitions

Regeneration = When an area has been completely transformed by the refurbishment of the buildings and landscape

Brownfield site = An unused or derelict area of urban land that has been built on previously.

Deprivation = A lack of basic materials needed for a decent quality of life, e.g. housing, food etc.

Why was it needed?

Derelict Land:



There was plenty of unused, overgrown land on previous industry sites. The land & waterways were polluted with chemicals.

Housing:



There was a community with 500 homes in one part of the site. Most of the site was not residential.

Social:



There was higher than average unemployment than the rest of London and higher deprivation & poverty for the people that lived there.

Transport:



Stratford International station was already built on land that had once been a railway freight terminal. By 2007 most land was brownfield site.

Main Features and Success



- ☺ 2800 new homes
- ☺ A new school for 1,800 students aged from 3-18.
- ☺ Olympic stadium = used by West Ham United FC
- ☺ Queen Elizabeth Olympic Park = over 100 hectares
- ☺ The International Quarter = A new commercial development which will employ 25,000 people
- ☺ Contaminated soil and polluted waterways cleaned
- ☹ Many flats in East Village remained unoccupied.
- ☹ Existing landowners and users had to leave the site by 2007.
- ☹ Local people protested the gentrification.
- ☹ London spent £9.3 billion of public money on the facilities for the 2012 Olympic Games.
- ☹ It is likely to take until 2030 for the process to be completed, so it is still too early to judge how successful the changes will be.

Olympic Legacy Timeline

9 September 2012 - end of the Games.

1 January 2013 - Olympic Park officially becomes Queen Elizabeth Olympic Park.

Spring 2013 - first inhabitants move into East Village (Athletes Village).

Summer 2014 - stadium opens and possibly hosts first Premier League match.

2017 - Crossrail opens, a new east-west rail route across London, through Stratford.

Until 2030 - five new neighbourhoods to be built, including 8,000 new homes.

Urban change in cities in the UK leads to a variety of social, economic and environmental opportunities and challenges.

An example of an urban regeneration project to show:

- reasons why the area needed regeneration
- the main features of the project.

Lower Lea Valley,
London, UK

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT...

East Village

Location



East Village is in Stratford in the Lower Lea Valley. During the Olympics it was used as the Athlete's Village but is now a sustainable urban community.



East Village

East Village has strong public transport links and car parking is limited to encourage people to use public transport. Buildings have green roofs and there is 10 hectares of parkland to help purify the air. In addition there are shops and services locally including a school for 3-18 year olds to limit the need for people to commute.

Features of Sustainable Urban Living

Water & Energy Conservation



- Water use is 50% less than an average urban area. This is achieved by recycling water and using naturally filtered rainwater to flush toilets. Energy use is 30% less than an average urban area. This is because of the use of a combined heat and power system which generates heat and energy from the same source.

Waste Recycling



- Water is recycled to reduce waste. Additionally, recycling is encouraged through the use of separate bins in public places and easy instructions on how to recycle within the home. This reduces the amount of waste that is going to landfill.

Creating Green Space



- Buildings through East Village have 'green roofs' which increases the amount of green space and habitat for wildlife. In addition, there are many parks and other open spaces around East Village to further improve the environmental quality of the area.

Urban sustainability requires management of resources and transport.

Features of sustainable urban living:

- water and energy conservation
- waste recycling
- creating green space.

East Village,
London

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... **TNC's** **In Nigeria**

Definition: A trans-national corporation operating in more than one country

Location

The oil industry in Nigeria is located in the Niger Delta region.



The Niger River, where it flows into the Gulf of Guinea.

Key facts

The oil boom in Nigeria took off in the 1970s

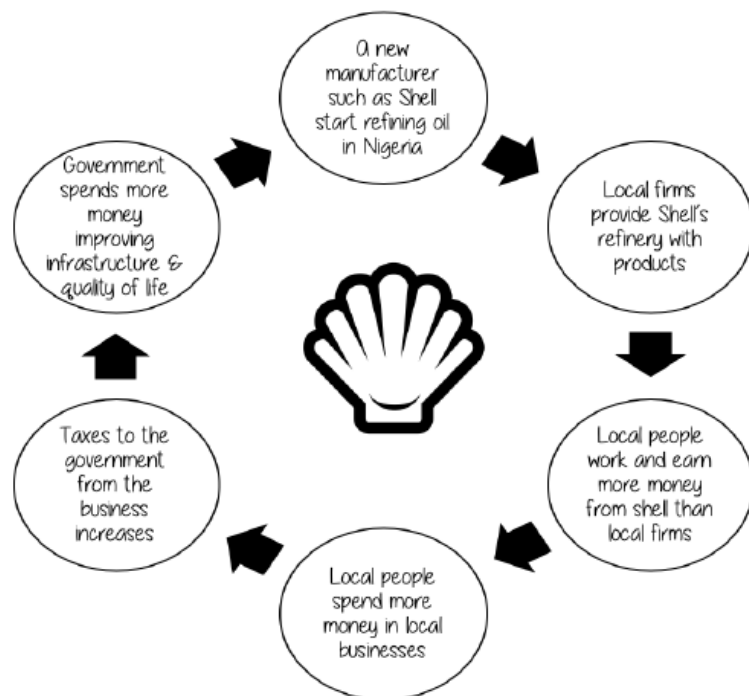


Companies such as Royal Dutch Shell (UK), Chevron (USA), have interest in oil in Nigeria



The Niger Delta region contains important wetland and coastal ecosystems.

Shell oil and the multiplier effect



Processes

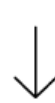
The companies erected drilling platforms on the oil and gas fields around the Niger Delta



The platforms are linked by pipelines to export terminals in the Gulf of Guinea



At the export terminal the crude oil is piped onto tankers



The oil is shipped to Europe and the USA where it is refined into petrol and other oil products



Advantages of shell oil



Shell provides direct employment for 65000 Nigerian workers and a further 250000 jobs in related industries

Shell has invested huge amounts of money and expertise into extracting oil in the Niger Delta

The managers of Shell bring knowledge and expertise to Nigeria

Shell has supported the growth of Nigeria's energy sector through investment

In 2018, approximately \$5.9 million was invested in educational scholarships in Nigeria

Shell oil currently supports 27 health facilities in the Niger Delta, including three new ones built in 2009

Disadvantages of shell oil



9 million oil barrels spilt in the last 50 years causing water and soil pollution, 75% of rural areas have no access to clean water. Frequent oil flares send toxic fumes into the air.

Poverty is increased due to pollution.

Rumours that Shell fund militant groups who try to disrupt oil supplies.

The pollution reduces fishing yields as fish die in oil spills

Oil theft and sabotage are big problems. This reduces oil production and costs TNCs and the Nigerian government billions of dollars every year

Oil spills from leaking pipelines damage farmland so crops no longer grow

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT...

Nissan

Sustainable Modern Industry

Location

Nissan's factory is in Sunderland, UK and was built on a derelict airfield.



Modern Sustainable Industries

In order to have a sustainable economy a country must have balance between the different sectors. This means there needs to be some manufacturing, even in the UK. Manufacturing can have a big impact on the environment and so many of these modern industries are finding ways to reduce their environmental footprint.

Impact of the car manufacturing industry on the environment

The car industry is one of the few large-scale manufacturing industries left in the UK. More than 1.5 million new cars are made in the UK every year and most of them at just 7 giant manufacturing plants. The car industry does not have the best reputation due to its impact on the environment. Throughout a car's life cycle it has environmental impacts. These include the fuel used whilst it's been driven as well as the energy needed to make the vehicle and dispose of it afterwards.

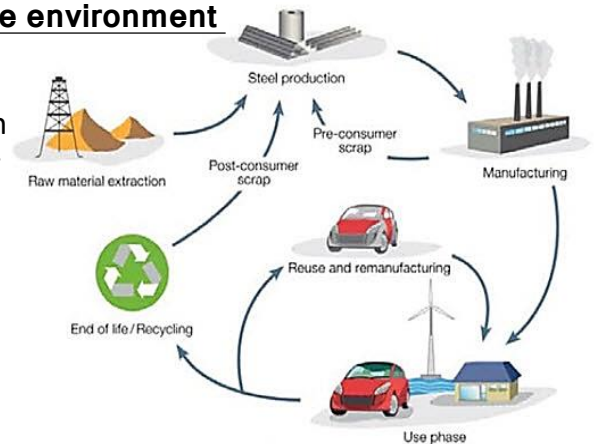


Figure 1: Vehicle life cycle

Source: worldsteel

What did Nissan do to be more sustainable?

- 🚗 Create the Nissan Leaf- an electric car which emits 0 emissions therefore having a small carbon footprint.
- 🚗 7% of energy used in the factory comes from wind turbines, a renewable source of energy ensuring that a smaller amount of pollution is emitted.
- 🚗 Cars are manufactured so as many parts as possible can be recycled. This reduces the amount of waste created when Nissan vehicles are scrapped.
- 🚗 The Sunderland factory was built on a brownfield site to ensure the damage to greenbelt land and to the environment was minimal.



Major changes in the economy of the UK have affected, and will continue to affect, employment patterns and regional growth.

- impacts of industry on the physical environment. An example of how modern industrial development can be more environmentally sustainable

Nissan

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT.. **Science & Business Parks**

Location



They are often found on the edge of cities, like Bristol and Cambridge, where there is good accessibility. Many are located close to universities to attract graduates.



Definitions:



A science park is a group of science and technical research centres located on a single site.

A business park is an area of land occupied by a cluster of businesses.

Growth Corridors

Are areas of fast economic growth following major transport routes.



UK's biggest industries



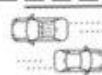
Research, e.g. universities, NHS, Environment Agency

Services, e.g. retail, doctors, teachers, engineers

Information technology, e.g. developing software or internet-based businesses

Finance, e.g. working in banks, giving out loans

Design features



Science and Business parks are areas of industry that have grown up on Greenfield sites outside of major cities around the world. The land is less costly than in the cities and the access to transport, routes in a prime consideration in their location. Often, Science and Business Parks have a large amount of green land to try and make it as pleasant a working environment as possible.

Business Parks also tend to have very close links to a major research institution, probably a university.

Cambridge business park



Cambridge is fast emerging as one of the UK's main hubs for high tech industry.

The business park was opened in 1972 by the university's Trinity College.



Over **1,500** information technology and biotechnology companies are now based there.

Cambridge is a perfect location for the types of hi-tech, often quaternary industries that locate there. The M11 offers a very quick route to London and beyond Stanstead airport is 30 minutes down the motorway along a **growth corridor**.



Many of the high-tech companies in Cambridge began as small start-up businesses, formed by university graduates who wanted to stay in the city when they finished their degrees. Some of these businesses like the biotech company Abcam have grown into successful companies (it is not worth £1 billion, employing 200).

Major changes in the economy of the UK have affected, and will continue to affect, employment patterns and regional growth.

- moving towards a post-industrial economy: development of information technology, service industries, finance, research, science and business parks

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... *The North-South Divide*

Location



The North is major cities such as Birmingham, Manchester, Leeds, Hull, Newcastle, Glasgow and Edinburgh.

The South is major cities such as Leister, Lincoln, Gloucester and London.



Key statistics



Life Expectancy

| | |
|---------------|-----|
| Liverpool (N) | 757 |
| Cambridge (S) | 795 |

Average house price

| | |
|-------|----------|
| North | £137,000 |
| South | £265,000 |

Government spending per person

| | |
|-----------|-------|
| London | £9176 |
| Yorkshire | £7623 |

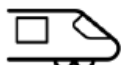
Average pay

| | |
|-------|--------|
| North | 24,000 |
| South | 28,000 |

% in poverty

| | |
|-------|----|
| North | 18 |
| South | 21 |

HS2



HS2 (High Speed 2) – a £50 billion plan for a new highspeed railway to connect London with Birmingham and the Midlands, Leeds and Manchester.

It may then be extended to Newcastle and into Scotland.

The scheme is due to start in 2027 for completion in 2033. It will create 10,000 jobs in the Midlands and 10,000 in the North.

It is estimated that HS2 will help generate £40 billion for the UK economy,

CANCELLED



Local enterprise partnerships



Voluntary partnerships between local authorities and business. There are currently 39 LEPs in England. Their aim is to identify business needs in the local areas and encourage companies to invest. In this way jobs will be created boosting the local economy.

The Lancashire LEP will promote new businesses and create 50,000 new jobs by 2023.

In 2013 a Business Growth Hub was established to support small and medium-sized businesses. £20 million of transport improvements are planned in cities such as Preston and Blackburn.

A £62 million BT investment will extend superfast broadband across 97% of the region.



Enterprise Zones



Since 2011, 24 new **Enterprise Zones** have been created. Their aim is to encourage the establishment of new businesses and new jobs in areas where there were no existing businesses.

The government support businesses in the Enterprise Zones by:

- Providing a new business rate discount for up to £275,000 over a five year period.
- Ensuring the provision of superfast broadband
- Financial allowances for plant and machinery
- Simpler planning regulations to speed up establishment of new businesses.

Northern Powerhouses



In 2015 the government launched a new strategy for a 'Northern Powerhouse' to help balance the wealth and influence of London and the South East. This involves developing the economies of the major cities in northern England such as Liverpool and Manchester. Tourism, food and energy are to be developed in rural areas.

Major changes in the economy of the UK have affected, and will continue to affect, employment patterns and regional growth.

- the north-south divide. Strategies used in an attempt to resolve regional differences

HS2

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... **Large-scale agriculture: Almeria, Spain**

| | |
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| <p>title</p> | <p>title</p> |
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| | |
|---|---|
| Different strategies can be used to increase food supply. | Overview of strategies to increase food supply: <ul style="list-style-type: none">• irrigation, aeroponics and hydroponics, the new green revolution and use of biotechnology, appropriate technology• an example of a large scale agricultural development to show how it has both advantages and disadvantages. |
|---|---|

Almeria, Spain

Paper 2 – Challenges in the Human Environment

ALL YOU NEED TO KNOW ABOUT... **Sustainable food supplies: Jamalpur**

| | |
|--------------|--------------|
| <p>title</p> | <p>title</p> |
| <p>title</p> | |
| <p>title</p> | |

Moving towards a sustainable resource future:

- the potential for sustainable food supplies: organic farming, permaculture, urban farming initiatives, fish and meat from sustainable sources, seasonal food consumption, reduced waste and losses
- an **example** of a local scheme in an LIC or NEE to increase sustainable supplies of food.

Jamalpur,
Bangladesh