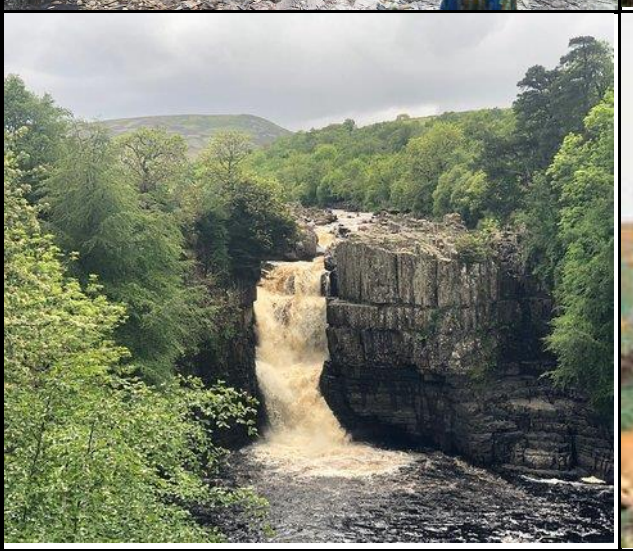
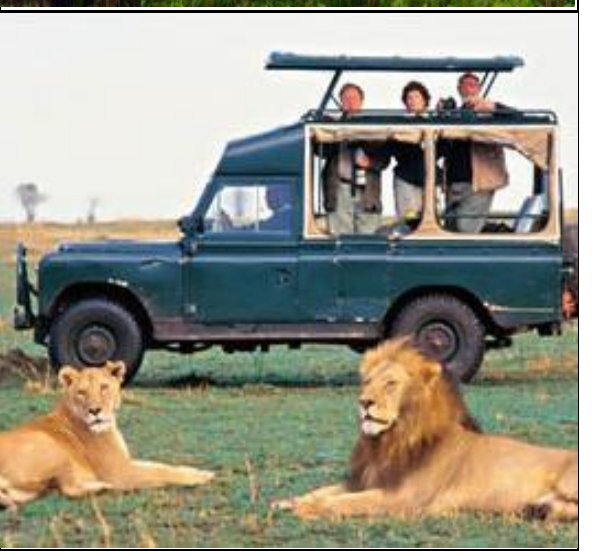
# AQA GCSE Geography Complete Case Study and Example Booklet





# Complete list of case studies and named examples for the course:

## Paper 1

| | |
|---|---|
| Effects of and responses to a tectonic hazard in a HIC | L'Aquila |
| Effects of and responses to a tectonic hazard in a LIC | Nepal |
| Impacts of a Tropical Storm on people and the environment | Typhoon Haiyan |
| Extreme weather event in the UK | Somerset Levels |
| Example of a small scale ecosystem | Freshwater pond, UK |
| Case Study of a Tropical Rainforest | Malaysian Rainforest |
| Development of a Cold Environment | Svalbard |
| Coastal landforms and processes | Dorset |
| Coastal management strategies | Lyme Regis |
| Distinctive fluvial landforms | River Tees |
| River Management strategies | Banbury |

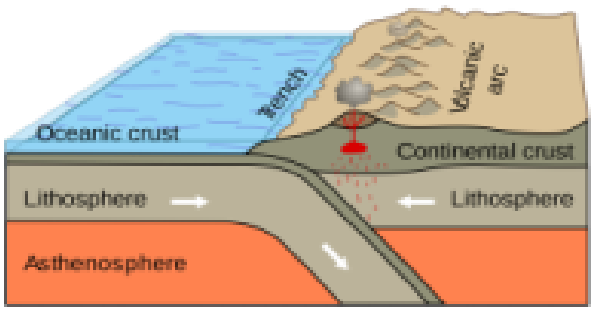
## Paper 2

| | |
|---|---|
| Urban growth in an NEE (opportunities and challenges) | Rio de Janeiro |
| Urban growth in the UK (opportunities and challenges) | Liverpool |
| UK Urban regeneration project | Albert Dock |
| Freiburg: Sustainable urban development | |
| Growth of tourism in an LIC to reduce development gap | Kenya |
| Rapid economic development in an LIC | Nigeria |
| Modern industrial development can be more environmentally sustainable | Torr Quarry, Somerset |
| Advantages and disadvantages of a fossil fuel | Natural gas in the Amazon |
| Local renewable energy scheme in an LIC | Rice husk biomass, Bihar India |

# L'Aquila Earthquake

*Your example of an earthquake in a HIC*

**What?** 6.3 Magnitude Earthquake
**Where?** L'Aquila, Central Italy
**When?** 6th April 2009




**Why?**
The oceanic African plate is subducting beneath the continental Eurasian plate.


## IMPACTS

### Economic

Businesses destroyed
Bridge connecting city to nearby towns destroyed.

PRIMARY SECONDARY PRIMARY SECONDARY

$11.4m total damage
House prices and rents increased
Decreased tourism in L'Aquila

### Social

15,000 buildings collapsed
Salvatore Hospital damaged
308 people killed

PRIMARY SECONDARY PRIMARY SECONDARY

67,500 people homeless
University applicants declined
Fires killed people in damaged buildings

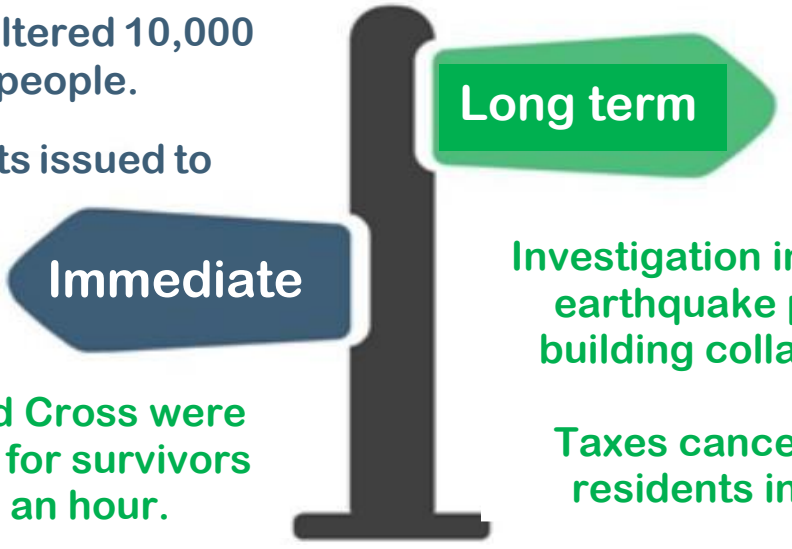
### Environmental

Destruction of habitats
1000 square km of land affected by surface ruptures

PRIMARY SECONDARY PRIMARY SECONDARY

300 aftershocks up to 4.5 on richter scale.
Landslides triggered by aftershocks

## RESPONSES




Hotels sheltered 10,000 homeless people.

40,000 tents issued to homeless.

Italian Red Cross were searching for survivors within an hour.

Investigation into why earthquake proof building collapsed.

Taxes cancelled for residents in 2010.

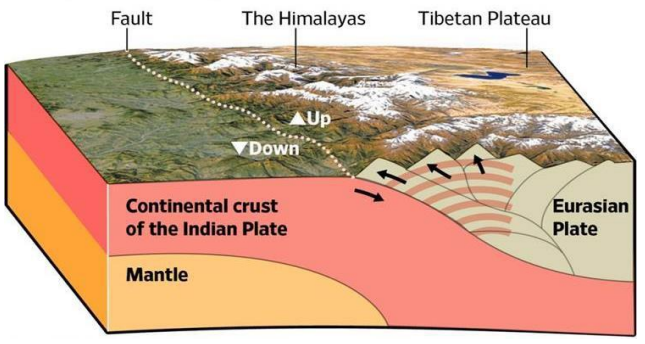
**Why were the responses effective?**

- Italy is a rich country so the government had available funds after earthquake.
- Emergency response was rapid due to good training.
- Excellent medical facilities to treat the injured.

# Nepal Earthquake

*Your example of an earthquake in a LIC*

**What?** 7.6 Magnitude Earthquake
**Where?** NW of Kathmandu, Nepal
**When?** 28th April 2015


**Why?**
The continental Indian plate is moving into the continental Eurasian plate forming fold mountains.

## IMPACTS

### Economic

International airport was destroyed.

50% of shops were destroyed

⇧PRIMARY ⇩SECONDARY ⇧PRIMARY ⇩SECONDARY

$10bn total damage

Tourism has declined

Looting broke out

### Social

8,800 people killed

26 hospitals destroyed

Half of schools destroyed

⇧PRIMARY ⇩SECONDARY ⇧PRIMARY ⇩SECONDARY

1 million people homeless

Huge food shortages

Disease broke out due to buried bodies.

### Environmental

Death of wildlife species

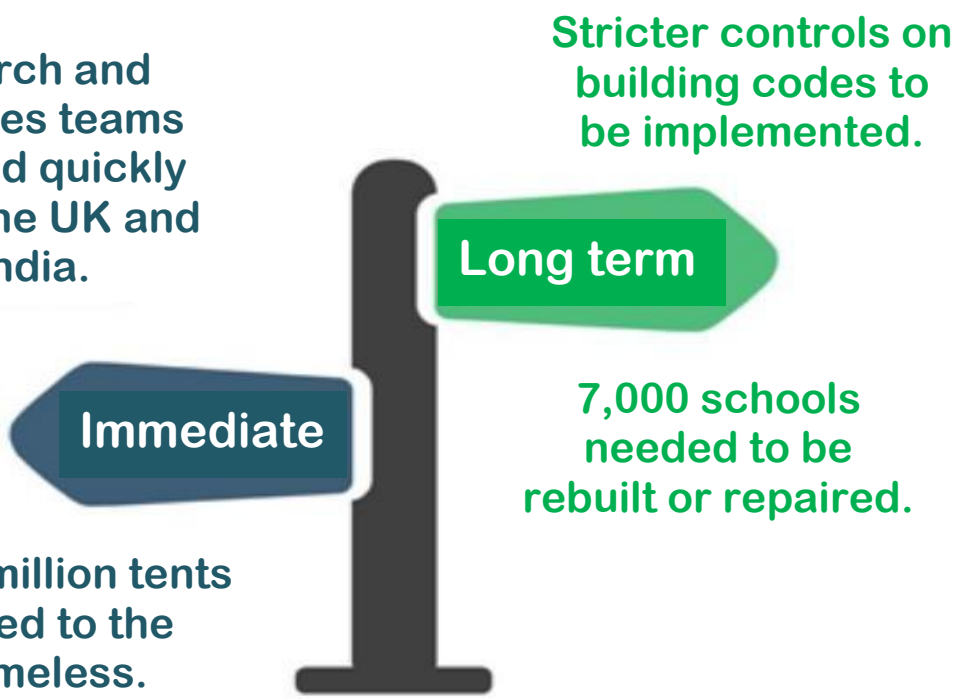
Large faults appeared in the ground

⇧PRIMARY ⇩SECONDARY ⇧PRIMARY ⇩SECONDARY

325 aftershocks

Avalanche triggered on Mount Everest killing 19 people

## RESPONSES



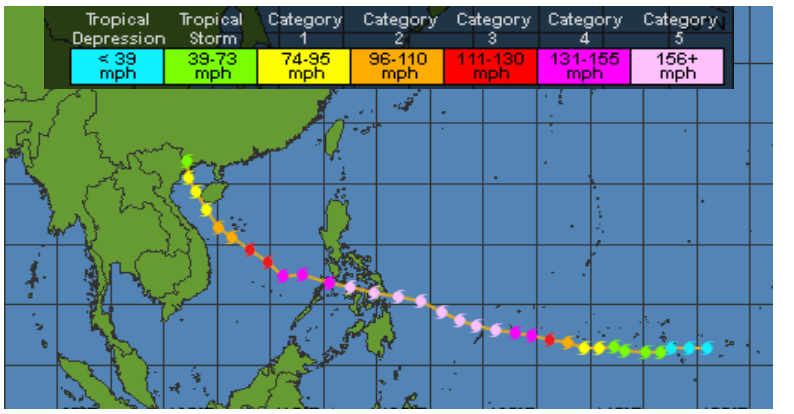

**Why were the responses not very effective?**

- Nepal is a poor country and does not have reserves of money for disasters like this.
- Emergency response was limited due to poor equipment.
- Poor building standards meant most buildings collapsed.

# Typhoon Haiyan

*Your named example of a tropical storm*

**What?** Category 5 typhoon
**Where?** NW Pacific - Philippines
**When?** 8th November 2013




195 mph

400 mm

7m

## IMPACTS

### Economic

PRIMARY
- 30k fishing boats destroyed
- 1.1m tonnes crops destroyed
- 90% Tacloban city destroyed

SECONDARY
- $5.8 billion total damage
- 6m lost source of income
- Damaged airport reduced trade/ tourism

### Social

PRIMARY
- 6,300 people killed
- 40,000 homes damaged
- Power lines/ hospitals destroyed

SECONDARY
- 1.9m people homeless
- Outbreak of disease/ looting
- Power supplies cut off for a month in some places

### Environmental

PRIMARY
- Widespread flooding
- Thousands of trees uprooted
- Oil tanker capsized by flood

SECONDARY
- Habitat destruction
- Freshwater contamination
- 800,000 litre oil leak

## RESPONSES

**Immediate**
- 1200 evacuation centres set up.
- 1m food packs and 250k litres water distributed within 2 weeks.
- US helicopters helped with search and rescue.
- UK government sent emergency kits.

**Long-term**
- Oxfam replaced fishing boats.
- 'Cash for work' programmes – people paid to clear debris and rebuild.
- More typhoon shelters built
- Storm surge warning system developed.

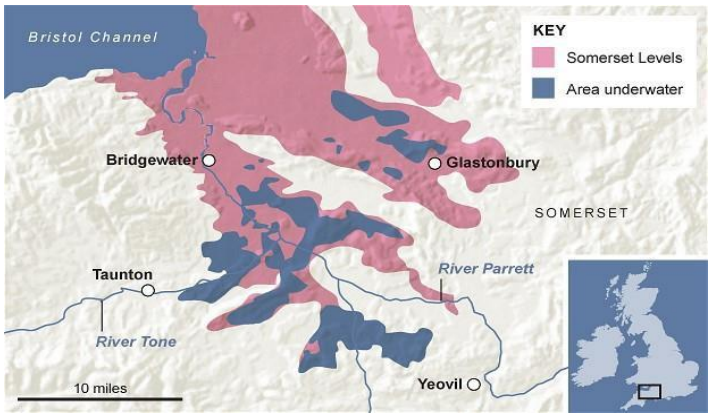
### Why was Typhoon Haiyan so devastating?

- Extremely warm ocean temperatures fuelled the super typhoon.
- Storm surge was incredibly high as it was channelled into a very narrow bay.
- Hit one of the poorest regions of the Philippines – low quality housing, lack of education and high population density.

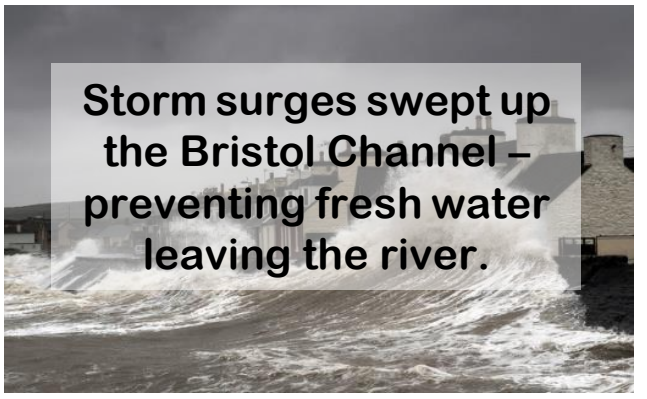
# Somerset Levels Floods

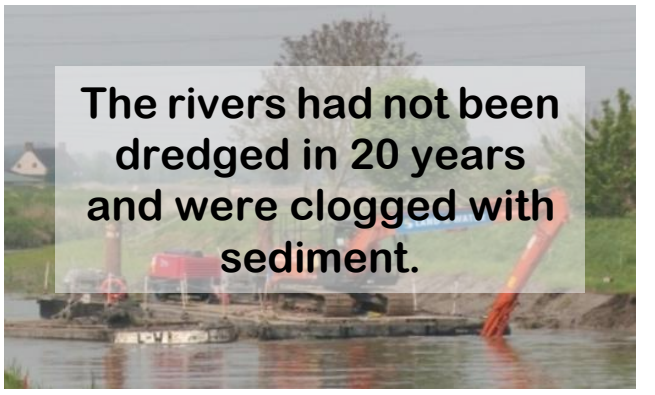
*Your example of extreme weather in the UK*

**What?** Extensive Flood Event
**Where?** Somerset, SW England
**When?** December 2013 – February 2014




## CAUSES


## IMPACTS

### Economic

Cost of damage £10 million.

14,000 ha of farmland flooded.

1000 livestock evacuated.

Local roads cut off – halting commuters.

### Social

600 houses flooded.

Residents evacuated to temporary accommodation.

Villages cut off.

Power supplies cut off.

### Environmental

Floodwater was contaminated with sewage.

Debris covered the land.

Animals drowned e.g. hedgehogs and badgers.

## RESPONSES

**Immediate**

Boats were used as a form of transport to go shopping and attend school.

Sandbags were used to protect homes.

The fire service used rescue boats to help stranded locals.

**Long-term**

£20m Flood Action Plan has been introduced to reduce the impact of future floods:

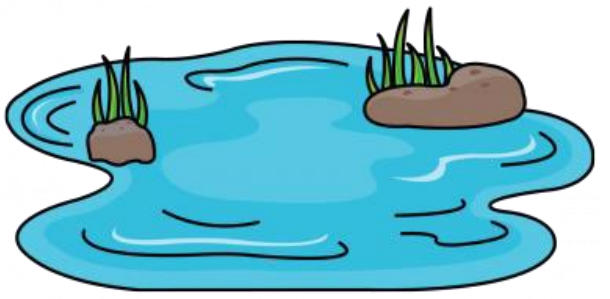
- Rivers have been dredged
- New flood defences installed
- Road levels raised

### Will UK flooding become more extreme?

Scientists believe that flood risk in the UK will increase due to global warming:

- More energy in the atmosphere leads to more intense storms and heavy rainfall.
- Future sea level rise will increase the pressure exerted by storm surges.

# A Freshwater Pond Ecosystem



*Your Example of a Small-scale ecosystem*

**Freshwater ponds provide a variety of habitats for plants and animals. There are big variations in the amount of light, water and oxygen available in different parts of a pond.**

## Food Chain

*(Direct links between producers and consumers)*

**Consumer**
*(Organism that consumers animals and/ or plants).*

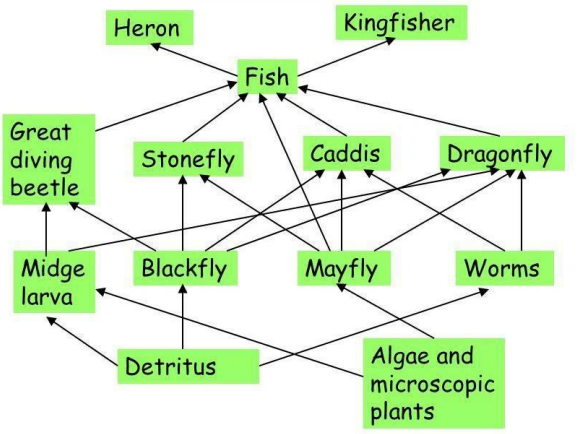
- Heron
- Perch (fish)
- Diving Beetle
- Midge Larva

**Producer**
*(An organism that absorbs energy from the sun through photosynthesis).*

- Detritus (decaying leaves)

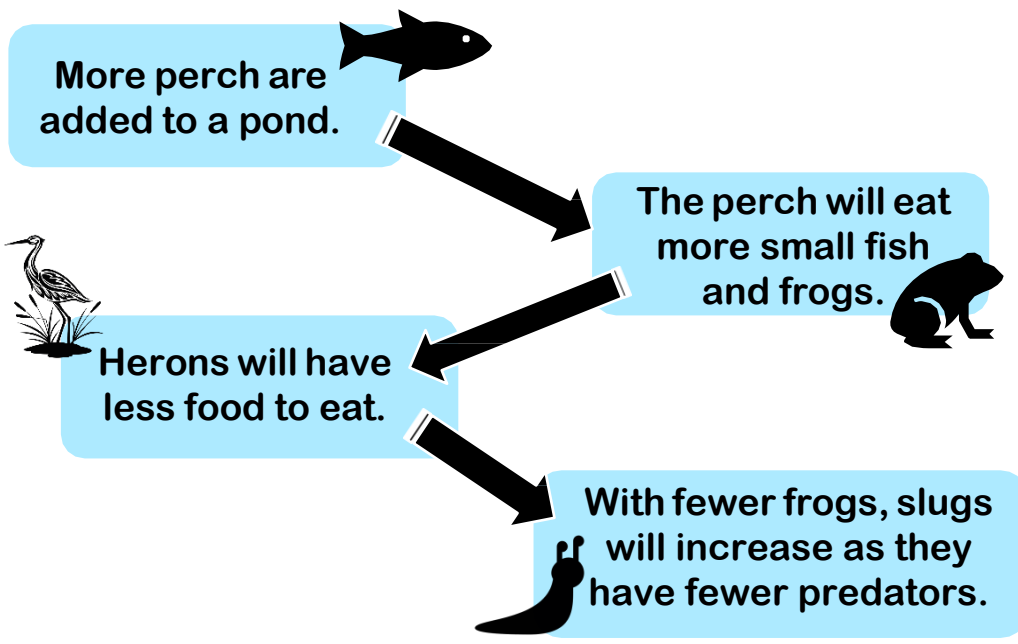
## Food Web

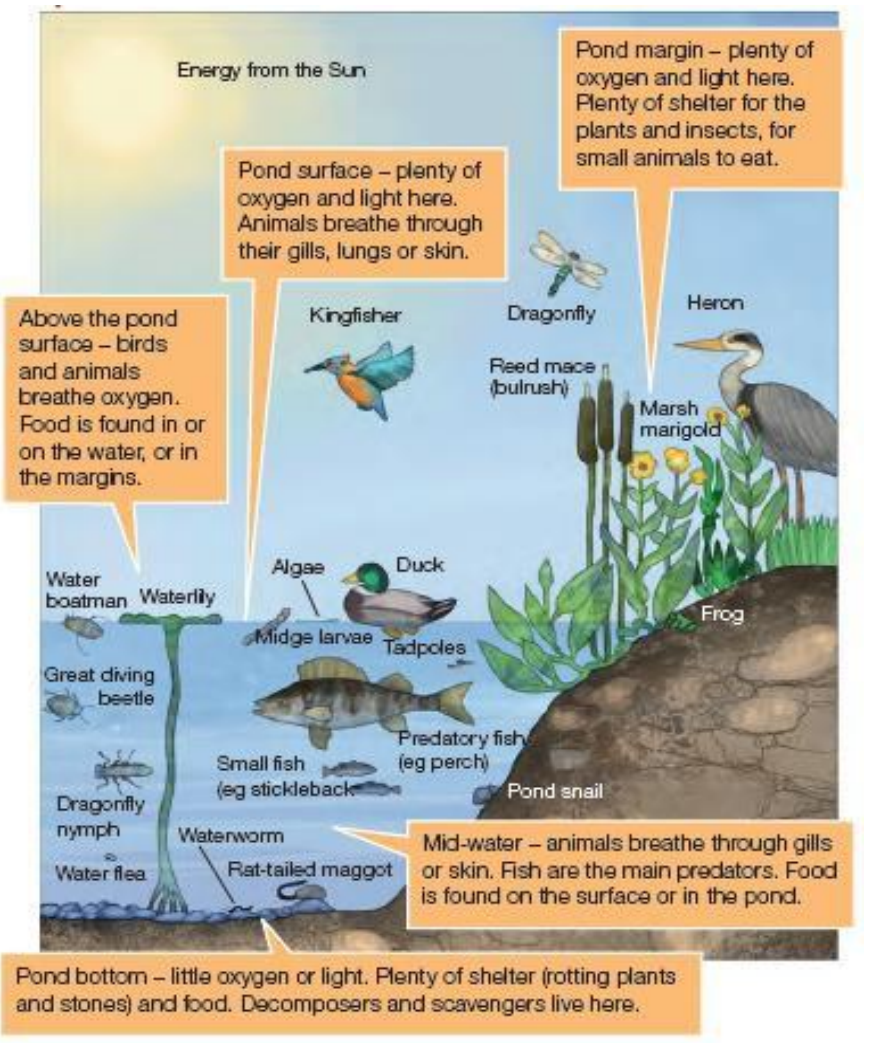
*(All connections between producers and consumers in an ecosystem)*



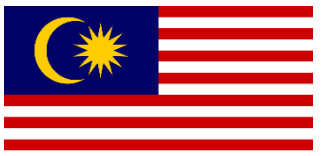

**Interdependence** - All organisms in an ecosystem depend upon each other. If the population of one organism rises or falls, then this can affect the rest of the ecosystem.

| Natural Change | Human Change |
|---|---|
| A drought could dry out the pond in places so that plants dry out and die. Fish may then be starved of oxygen and die too. | Agricultural fertilisers can lead to eutrophication. Algae will grow out of control and deplete the oxygen – fish may die due to lack of oxygen. |



# Deforestation in Malaysia



*Your Case Study of a Tropical Rainforest*

- Malaysia is located in South East Asia
- 67% of the land is covered by rainforest
- The rate of deforestation is increasing faster than any other tropical country in the world


## CAUSES OF DEFORESTATION IN MALAYSIA

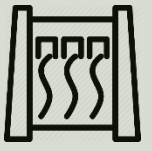
### Logging

Malaysia became the worlds largest exporter of tropical wood in the 1980's.

### Road Building

Roads are built to provide access to mines, new settlements and for logging trucks.

### Energy Projects



The Bakun Dam generates 2400 MW of clean energy and 700km² of rainforest was flooded by the reservoir.

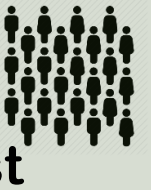
### Mineral Extraction

Gold, copper and tin mining activities are common in Malaysia.

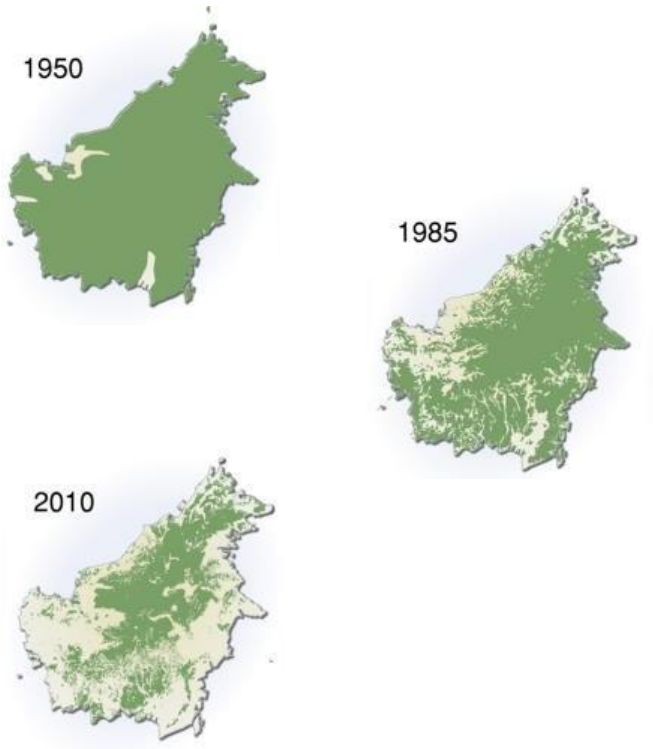
### Commercial Farming

Malaysia is the largest exporter of palm oil in the world. Huge areas of forest have been cleared to create plantations.

### Population Pressure



15,000 hectares of rainforest were cleared for new settlers from urban areas between the 1950's and 1980's.




- Malaysia loses approximately 96,000 hectares of rainforest per year.
- Only 12% of remaining rainforest is considered ‘pristine’.
- Approximately 40% of rainforest has been removed by human activities.

# IMPACTS OF DEFORESTATION IN MALAYSIA

## Climate Change

Deforestation reduces the moisture in the air from trees and leads to a drier climate. Fewer trees means that more $CO_2$ is in the atmosphere which leads to a warmer climate through the greenhouse effect.

## Loss of Biodiversity

Rainforests contain half of the worlds plant and animal species. Deforestation leads to habitat loss and therefore a reduction in biodiversity.
Orang-utan numbers have decreased by 75% in the last 100 years in Malaysia.

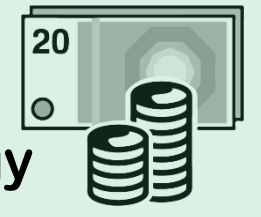
## Soil Erosion

Tree roots hold the soil together. When they are removed the soil can be easily eroded by wind and rain. When the soil is removed new vegetation can not colonise the area.

## Medicine Shortages

Approximately 25% of medicines contain rainforest ingredients. One example is Quinine the cure for Malaria. It is also believed that the cure for cancer will come from the rainforest. As the rainforest is removed life saving medicines are being lost.

## ECONOMIC BENEFITS OF DEFORESTATION




- Hydroelectric power provides cheap and plentiful energy
- New roads open up areas for tourism and industry
- Mining, farming and energy developments provide jobs
- International companies pay tax to the government that can be used to improve public services.

# Opportunities and Challenges in Svalbard

*Your Case Study of a Cold Environment*

- Svalbard is a Norwegian territory in the Arctic Ocean.
- Its is the most northerly permanently inhabited place in the world.
- 60% of the land is covered by glaciers.
- The capital is Longyearbyen.


7°C

-30°C

More than

More than

## Development Opportunities

## Development Challenges

### 300 jobs in coal mining

*It is the main economic activity – although environmental groups are against it as it contributes to climate change.*

### 150 species of fish
### Breeding and nursery grounds

*The Barents Sea has one of the richest fish stocks in the world – however there are tight fishing quotas and fishing is not allowed during the breeding season.*

### Geothermal Energy is a possibility in Svalbard

*Heat from the nearby Mid Atlantic Ridge could be used to generate renewable energy – however the power plants must be constructed first.*

### 300 jobs in the tourism industry

*In 2011, 70,000 people visited Svalbard – most by cruise ship! Visitors look at the glaciers, wildlife and northern lights but can damage the environment if they are not careful.*

### Extreme temperatures

*Winter temperatures can drop below -30˚C. Working outside is very dangerous and so people must dress very warmly.*

### Construction

*Most construction work must take place in summer due to low temperatures and limited light in winter. Permafrost can also damage buildings if it melts so buildings are often constructed on stilts.*

### Accessibility

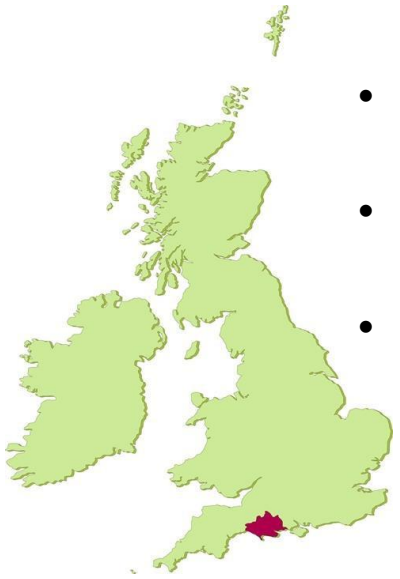
*Svalbard can only be accessed by plane or ship. There is only 50km of road and most people use snowmobiles to get around.*

### Services

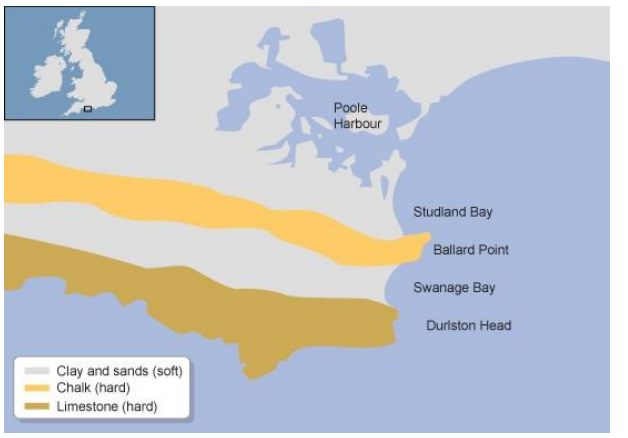
*Getting water, electricity and sanitation to buildings is difficult in Svalbard. Pipes must be built over ground to prevent them from freezing or damaging the permafrost.*

# Coastal Landforms in Dorset

***Your Example of a section of coastline in the UK***



- **Located on the south coast of England**
- **Stretches from Lyme Regis in the west to Bournemouth in the east.**
- **Discordant geology leads to differential erosion – bands of chalk and limestone erode much more slowly than bands of clay and sand.**




## Erosional Landforms

### Durdle Door

**An excellent example of a sea arch. Waves have eroded right through the limestone headland.**

### Lulworth Cove

**On a concordant coast a band of weak clay has been rapidly eroded behind a resistant band of limestone to form a cove.**

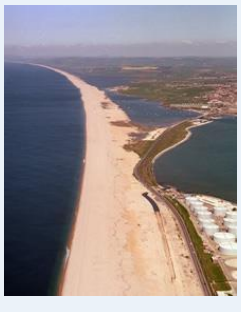
### Old Harry Rocks

**A chalk headland has been eroded by waves to form a sea stack (Old Harry) and a stump (Old Harry's Wife).**


## Depositional Landforms

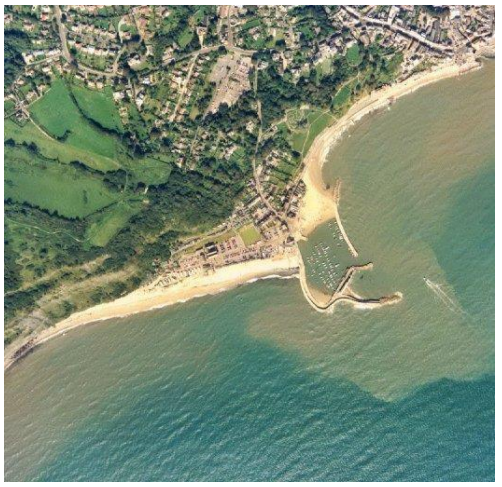
### Chesil Beach

**An 18km stretch of beach with Britain's longest tombolo connecting Portland island to the mainland.**

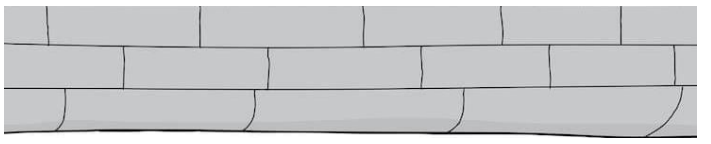


# Coastal Management at Lyme Regis

*Your Example of a coastal management scheme in the UK*



- Located on the south coast of England in the county of Dorset.
- The town is a popular tourist destination.
- In the summer the population swells from 4,000 to 15,000!



- Much of the coastline is built on unstable cliffs.
- The coastline is eroding quickly due to the powerful waves from the south west.
- Many properties have been damaged or destroyed.
- The sea walls have been breached many times.

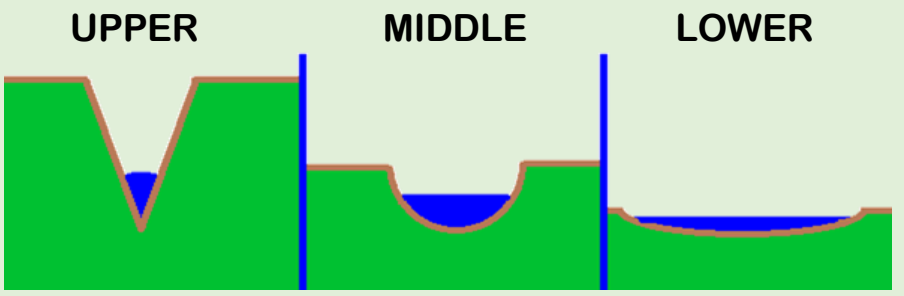

- The Lyme Regis Environmental Improvement Scheme was set up in he 1990s to protect the coast.
- £22 million spent on building sea walls along the promenade.
- £1.4 million spent on cliff stabilisation.
- A wide sand and shingle beach was constructed to absorb wave energy.

| SUCCESSES | NEGATIVE OUTCOMES |
|---|---|
| • The new beaches have increased visitor numbers and seafront businesses are thriving.<br>• The new defences have stood up to recent stormy winters.<br>• The harbour is now better protected, benefitting boat owners and fishermen. | • Increased visitors have led to increased congestion and litter.<br>• Some people feel that the sea walls have ruined the natural landscape.<br>• Fossil hunters are struggling to find new fossils as there are fewer landslides due to cliff stabilisation. |

# Landforms on the River Tees

*Your Example of a river valley in the UK*

**A variety of landforms can be found in the upper, middle and lower course of the River Tees. The landforms are determined by the dominant processes in each course (e.g. vertical/ lateral erosion or deposition).**





- **Located in the north east of England**
- **Flows for 128km from it's source in the Pennine Hills to it's mouth at Middlesbrough on the North Sea.**

## Upper Course

**High Force Waterfall**

**The river drops 20m into the plunge pool below. The underlying limestone has eroded faster than the more resistant upper band of dolerite.**

## Middle Course

**Barnard Castle Meanders**

**As lateral erosion becomes the dominant process in the middle course, meanders are forms near Barnard Castle.**

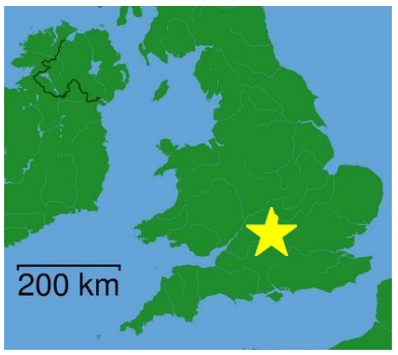
## Lower Course

**Levees at Newsham**

**Repeated flooding has caused the development of raised banks (levees) along the lower course near Newsham.**

# Managing Floods at Banbury

*Your Example of a flood management scheme in the UK*




- Located in the Cotswold Hills in the county of Oxfordshire.
- The town has a population of 45,000.
- The town is located on the floodplain of the River Cherwell


- Banbury has a history of devastating floods.
- In 1998 flooding affected 150 homes and businesses and shut local roads.
- The flooding in 1998 cost £12.5 million of damage.
- In 2007 the river burst its banks after very heavy rain and flooded much of central and western England.

- A new flood storage area was constructed that can hold 3 million cubic metres of water.
- New floodwalls have been built to protect homes and businesses.
- A new pumping station transfers rainwater beyond the town.
- New ponds, trees and hedgerows have been added to absorb water and boost biodiversity.

## Social, economic and environmental costs and benefits of the scheme

| Social | Economic | Environmental |
|---|---|---|
| The raised A361 will remain open in future floods – reducing disruption to locals.<br><br>Reduced levels of anxiety and depression through fear of flooding. | The cost of the scheme was about £18.5 million.<br><br>By protecting 441 houses and 73 businesses, the benefits are estimated to be over £100 million. | New habitats have been created with ponds, trees and hedgerows.<br><br>The floodplain will be deliberately allowed to flood when river levels are high. |

# Tourism in Kenya

*Your Example of how tourism in an LIC can close the Development Gap.*


- Kenya is a low-income country in East Africa.
- Kenya's government is trying to boost tourism as a way of increasing its development.
- Two million tourists visited Kenya in 2019.

## Attractions

Tribal Culture

Warm Climate

Safari Animals

Beautiful Beaches

## POSITIVES AND NEGATIVES OF TOURISM

Tourism now contributes 12% of Kenya's GDP – money that can be spent on development and improving quality of life.

600,000 people are directly or indirectly employed by the tourism industry – that's 10% of all employment in Kenya.

The 24 national parks charge entry fees to tourists. This money is used to maintain the national parks, which helps to protect the environment and wildlife.

Since 2000, Kenya's score on the Human Development Index has increased from 0.45 to 0.55.

Only a small proportion of the money earned goes to locals – the rest goes to big companies, often based in HICs overseas, so doesn't help to close the development gap

Some Massai tribespeople were forced off their land to create national parks for tourists.

Tourists have damaged the coral reefs by standing on them and taking pieces home a souvenirs.

# Urban Growth in Rio de Janeiro

*Your Case Study of Urban Growth in an NEE*

Rio de Janeiro is situated on the east coast of Brazil just north of the Tropic of Capricorn. It borders the Atlantic Ocean and the largest city in Brazil – São Paulo is just to the west.


## Causes of Growth:

**Natural Increase**

**Rural – Urban Migration**

**IMPORTANT**

### Regional

- Commuters travel into the city for employment.
- Locals travel in to the city to visit the museums, galleries and festivals.

### National

- Rio produces 5% of Brazil's GDP.
- Rio is the main hub for banking and finance in Brazil.

### International

- Rio has 5 ports and 3 international airports.
- The city hosted the 2014 world cup and the 2016 Olympic games.

# OPPORTUNITIES IN RIO DE JANEIRO

### Economic – Formal Jobs

Rio provides 6% of all employment in Brazil. It is the most visited city in the southern hemisphere and tourism provides a huge number of jobs. The construction industry has boomed due to the world cup and Olympic games.

### Economic – Informal Jobs

Approximately 60% of workers work in the informal sector. Many of these people live in the favelas and hold jobs such as street vendors, shoe-shiners, street recyclers and windscreen washers.

### Social - Healthcare

Life expectancy in Rio is 77 – 4 years higher than Brazil's average. There are 105 hospitals and infant mortality rates are 3 times lower than the national average.

### Social - Education

Rio contains 19 of the top 50 schools in the country and has 6 major universities. The illiteracy rate is 4% - one of the lowest rates in Brazil.

### Social – Water Supply

95% of the population has mains water su
Rio de Janeiro compared with only 65% of the
rural population.

### Social – Energy Supply

In Rio 99% of people have access to the power grid compared to 25% in some parts of the country. The Simplicio hydroelectric plant was built in 2013.

# CHALLENGES IN RIO DE JANEIRO

## Economic – Unemployment

Economic inequality is high in Rio. The richest 1% of people earn 12% of the city's GDP. In favelas the unemployment rate is over 20% and those that do have a job are usually employed in the unreliable informal economy.


## Economic – Crime

Murder, kidnapping, carjacking and armed assault occur regularly. Powerful gangs control drug trafficking in many of the favelas.

## Social - Education

In Rio only half of all children continue their education beyond 14 as many of them get a job to support their families. Teenage pregnancy is also high.

## Social – Healthcare

In 2013 only 55% of the city had a local family health clinic. Services for pregnant women and the elderly were very poor, especially in the West Zone.

## Environmental – Water Pollution

Guanabara Bay is highly polluted as 200 tonnes of raw sewage and 50 tonnes of industrial waste pour into the bay each day. Ships also rinse their oil tanks into the bay regularly.

## Environmental – Air Pollution

The number of cars in Rio has grown by 40% in the last decade and air pollution kills 5,000 people a year.

## Favela Bairro Project

Complexo do Alemão is a group of favelas in Rio's north zone with over 60,000 residents. It underwent a big improvement project in 2010.

### Successes:

- Roads were paved and formally named.
- Hillsides were secured to prevent landslides.
- A cable car system was installed and residents were given on free return each day.
- A Pacifying Police Unit patrols the favella to prevent drug gangs from taking control.

### Limitations:

- The newly built roads are not being maintained.
- Rents have risen as the favela became more popular.
- More training is needed to improve literacy and employability.
- The $1 billion does not cover improvements in every favela in Rio.

# Urban Change in Liverpool

*Your Case Study of Urban Change in a UK city*

**Liverpool is a city located in north west England. It can be found on the banks of the River Mersey where it flows in to the Irish Sea. Manchester is located 30 miles to the east.**


**National**

- In 2017 Liverpool experienced the highest economic growth in the UK.
- It is rated the 7th best city for shopping in the UK.
- Liverpool contains 5 of the top 10 museums in northern England.

**IMPORTANT**

**International**

- Birthplace of the world famous Beatles.
- 38 million tourists visited the city in 2018.
- The city centre boasts an international cruise terminal.

## Impacts of Migration

Hardworking and motivated workforce.

Pressure on housing.


Language barrier amongst workers and school students.

Enriched culture in the city.

Contribution to the economy

# OPPORTUNITIES IN LIVERPOOL

## Economic – Employment

There are many new employment opportunities Liverpool. This includes jobs on Liverpool Science Park, the upcoming Baltic Triangle area and the new Liverpool 2 container port.

## Socioeconomic – Transport

The Liverpool Walrus card allows people to load up tickets for bus, train and ferry journeys onto one simple card. This makes using public transport much more efficient.

## Social - Sport

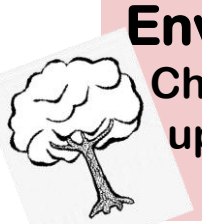
Liverpool is home to 2 football clubs in the premier league – LFC and EFC. The Grand National also welcomes 70,000 visitors each year.

## Economic – Tourism

Liverpool is the fifth most visited place in the UK amongst oversees visitors. In 2018 64, million tourists visited the city and the tourist industry provides 53,000 jobs for locals.

## Social - Retail

Liverpool One boasts 170 shops, an IMAX cinema and bars and restaurants. It received 29 million visitors in 2018 and makes Liverpool the 7th most popular city for shopping in the UK



## Environmental – Urban Greening

Chavasse Park in Liverpool One is made up of 5 acres of green space, fountains and quiet places to sit.

# CHALLENGES IN LIVERPOOL

## Economic – Industrial Decline

In the 20th century, industrial decline occurred in Liverpool. It left much of the inner city very deprived. Areas such as Anfield and Toxteth are among the most deprived areas in England.

## Social - Education

In more deprived areas school students achieve lower exam results. The proportion of students achieving 5 A*-C GCSEs in Woolton is 75% and in Anfield is only 54%.

## Environmental - Dereliction

As people left inner city areas, buildings were left empty. Derelict buildings are targets for graffiti and vandalism. Many areas such as Anfield became run down.

## Economic – Housing Inequalities

Areas that have been regenerated often boast better quality housing. The average semi detached house price in Anfield is£101,000 and in Woolton it is £230,000.

## Social – Unhealthy Lifestyles

In deprived areas, drinking, smoking and poor diets are more common. In Woolton there are 2,100 annual alcohol related deaths and in Anfield there are 3,400.

## Environmental – Greenfield Sites

As the population of Liverpool rises, more housing estates are being built on greenfield sites. This destroys habitats and lowers biodiversity.

## The Royal Albert Dock Regeneration Project

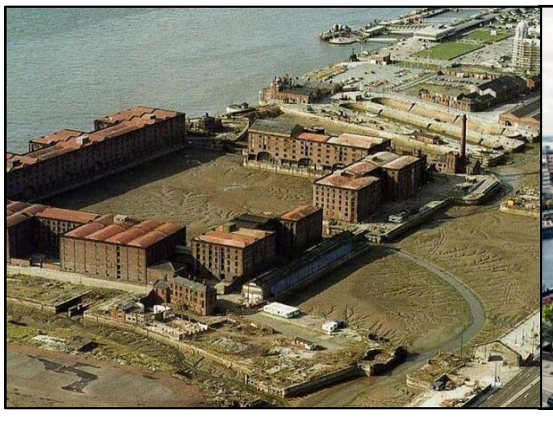
**Reasons for regeneration:**

- 1.25 million square feet of wasted space
- An eye-sore in the city centre
- A symbolic site that highlighted deprivation

**Features of the Project:**

- A range of uses – bars, cafés, hotels and apartments.
- Source of employment – 30 offices present in dock.
- Environment was upgraded, with green spaces and planting areas.

**It is the most visited free attraction in North West England with 6.3 million people visiting it in 2016.**



# Sustainability in Freiburg

*Your Case Study of Sustainable urban development*

- Freiburg is a city located in south west Germany.
- In 1970 the government set a target to make Freiburg the first German city to be completely sustainable.


## SUSTAINABLE PLANNING

### SOCIAL

- Locals can invest in renewable energy projects.
- In return for their investment, locals receive free football season tickets.
- Financial rewards are given to those who compost their waste.

### ECONOMIC

- Over 10,000 people are employed in 1500 environmental businesses.
- Over 1000 people are employed in the solar industry.
- Many solar companies have their headquarters in Freiburg.

### ENVIRONMENTAL

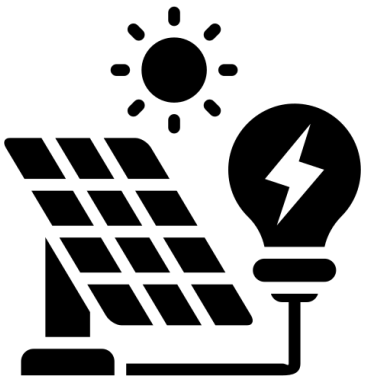
- There are 350 community collection points for recycling.
- Energy is provided to 28,000 homes by burning waste.
- Annual waste disposal was reduced by 90,000 tonnes in just 12 years.

# SUSTAINABLE LIVING IN FREIBURG

## SUSTAINABLE WATER SUPPLY

**Residents are encouraged collect and recycle water to limit their consumption as much as possible. They:**

- **Collect rainwater in water butts**
- **Have grass roofs to filter pollutants out of the collected rainwater.**
- **Have pervious pavements that allow rain to soak through which reduces flood risk.**



## SUSTAINABLE ENERGY SOURCES

**Freiburg planners have reduced the cities reliance on fossil fuels for energy production by:**

- **Setting a target to get 100% of energy from renewable sources by 2050.**
- **Introducing 400 solar panel installations to provide clean energy. Solar power is used in the main railway station and football stadium.**
- **Heating the cities 3 swimming pools by burning organic waste to create biogas.**

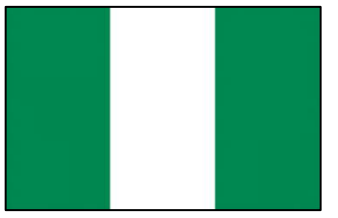
## GREEN SPACES

**When planning the city, green spaces were included to act as 'green lungs' to purify the air:**

- **40% of the city is forested.**
- **44,000 trees have been planted in parks and streets.**
- **The River Dreisam is allowed to flow unmanaged to provide natural habitats for flora and fauna.**

# Economic Growth in Nigeria

*Your Case Study of rapid economic growth in an NEE*



**IMPORTANT**

**Importance in Africa**
- Highest GDP in Africa.
- Largest farm output in Africa.
- Largest population in Africa – 182 million.

**International Importance**
- Worlds 21st largest economy.
- 12th largest producer of oil in the world.
- Fifth largest contributor to UN peacekeeping forces.


**Nigeria is located in West Africa. It borders Chad, Niger, Benin and Cameroon. It has a coastline on the Gulf of Guinea**

## Wider Context of the Country

### Political
- Previous civil wars slowed development.
- Now has elections and a stable government.

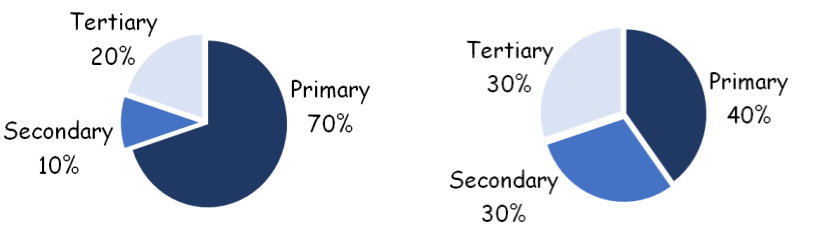
### Social
- Numerous ethnic and religious groups.
- Social tension due to economic inequality between north and south.

### Environmental
- Northern Nigeria is semi-desert
- Southern Nigeria has high rainfall and cocoa and palm oil are grown.

### Cultural
- Nigerian teams have won the African cup of nations 3 times.
- Has its own film industry called 'Nollywood'.

## Changing Industrial Structure

- Proportion of workers in the primary sector has decreased from 70% to 40%.
- Proportion of workers in the secondary sector has increased from 10% to 30%.
- The proportion of workers in the tertiary sector has increased from 20% to 30%.




## Role of Shell in Nigeria

**Shell is a** (TNC) - a large company that operates in several countries.

It is one of the worlds largest oil companies with headquarters in the Netherlands.

Shell has been exporting oil from Nige since 1958.

**Advantages:**
- Direct employment for 65,000 Nigerians.
- Major contributions to Nigerian taxes.
- Gives 91% of shell contracts to Nigerian companies.

**Disadvantages:**
- Oil spills have causes severe water pollution.
- Oil flares send toxic fumes into the air.
- Oil theft costs Shell and the government billions of dollars per year.

# Global political and trading relationships

Nigeria is part of large political groups including the African Union and the United Nations.

Crude oil is Nigeria's biggest export and India is their biggest customer. It is known as 'sweet oil' for it's high quality.

Nigeria has a large agricultural sector that employs 40% of the population. Cotton is their biggest export and Australia is their biggest customer.

**Despite having the highest GDP in Africa, many Nigerians are still extremely poor. As a result, the country receives long term Development Aid from many countries and organisations.**

**AID in Nigeria**

The NGO Nets for Life provides free mosquito nets to protect people from malaria.

In 2014, the World Bank approved a $500 million fund to provide long term loans to Nigerian businesses.

The US Community Care project provides support packages for orphans.

The UK has funded a HIV programme, providing health education to rural communities.

# Environmental Impacts of Economic Development

## Industrial Growth

- 10,000 illegal industries illegally dump toxic waste
- Breathing and lung problems caused by toxic fumes.

## Urban Growth

- Waste in slums is dumped on the streets
- Traffic congestion causes air pollution.
- 70% of forests have been removed through urban sprawl and logging.

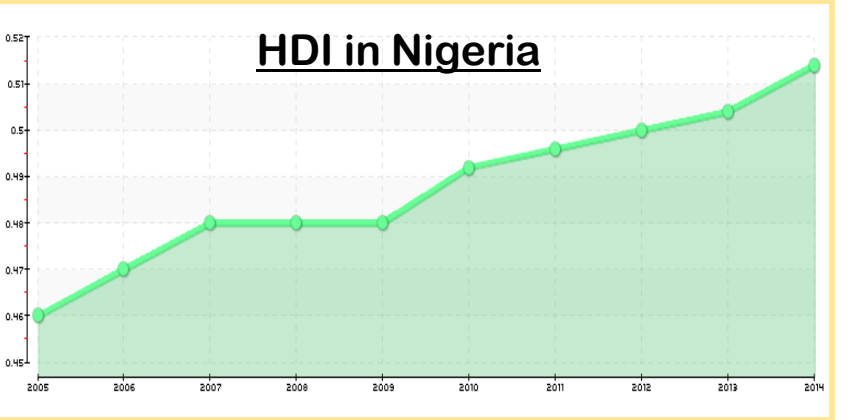
## Oil Extraction

- Oil spills damage freshwater and marine ecosystems.
- Oil spills release $CO_2$ which leads to acid rain.
- 600,000 barrels of oil were leaked in the 2008 Bodo oil spill.

# Economic Development and Quality of Life

**In the last decade, Nigeria has had one of the highest HDI improvements in the world. It is clear that development in Nigeria has improved quality of life. Some of the main improvements include:**

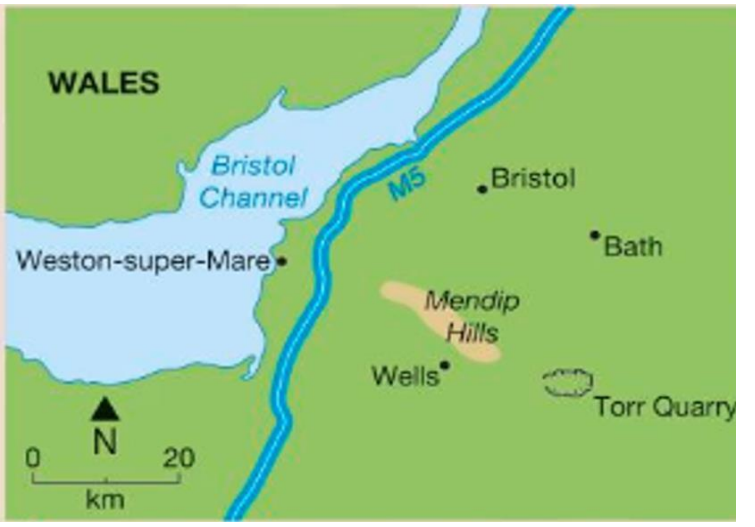
- Improvements to infrastructure such as roads and internet.
- Better access to safe water and sanitation.
- More doctors and better equipped hospitals.
- More reliable electricity providing lighting and heating.
- Higher disposable income to buy food.



# Torr Quarry Restoration

***Your Example of how modern industrial development can become environmentally sustainable.***

- **Limestone quarry on the Mendip Hills occupying 2.5km$_2$**
- **100 people are employed in the Quarry**
- **The quarry contributes £15 million to the local economy and produces 5 million tonnes per year.**




## SUSTAINABLE SOLUTIONS

## ENVIRONMENTAL IMPACTS

**Habitat Destruction**

**Wildlife lakes created for recreation and water supply.**

**200 acres has been landscaped to blend in with landscape. Trees planted.**

**Scarred Landscape**

**Limestone features created to make the landscape look natural.**

**Air and Water Pollution**

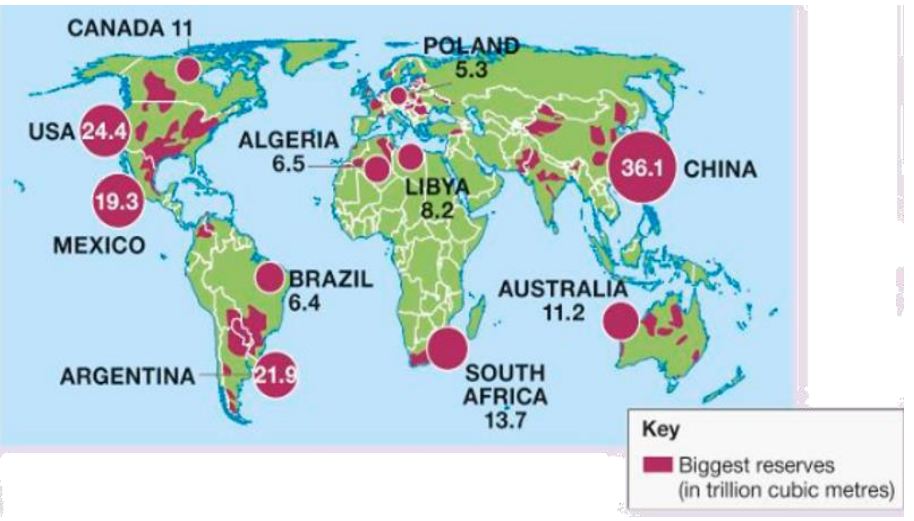
**Regular monitoring of noise, air and water pollution levels.**

**Limestone is transported by rail – reducing emissions from lorries.**

# Extracting Natural Gas in the Amazon

*Your Example of the advantages and disadvantages of a fossil fuel.*

- Natural gas reserves can be found across the globe.
- The Camisea project began in 2004 to exploit a huge gas field in the Amazonian region of Peru.




Peru could make $34 billion from gas exports.

The traditional life of indigenous people is affected.

Deforestation has led to habitat destruction.

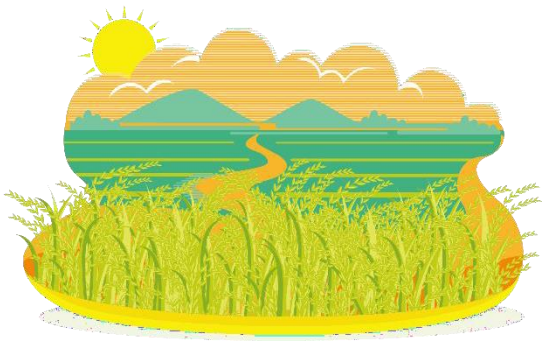
It could save Peru $4 billon in energy costs.

Improved roads can benefit the locals.

Developers introduce diseases to local people.

Deforestation has led to landslides and streams are polluted

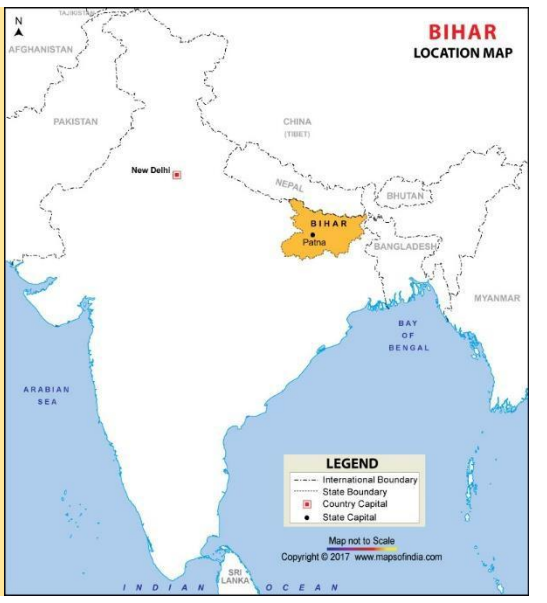
The project provides employment opportunities.



# Rice Husk Sustainable Energy in Bihar

*Your Example of a local renewable energy scheme in an NEE*

- Bihar is a rural state in north east India
- 85% of residents have no access to electricity
- A scheme began in 2007 to provide electricity for villagers.
- The scheme burns rice husks (a left over product from rice farming) in a biomass plant.




Rice husks are burned in biomass plants that provide electricity for homes up to 1.5km away.

By 2015, 84 rice husk powered plants were supplying energy to 200,000 people.

Producing energy locally is efficient as energy sources are not transported long distances.

Biomass energy has reduced the need for diesel generators – reducing carbon emissions.

The power plants provide job opportunities for locals who are trained to run and repair the power plants.

The government now provides financial support to set up ne biomass plants.