This symbol indicates a located example.

This symbol indicates a case study.

GCSE Geography

Key tips:

Always **locate** your examples even if you have not been asked to.
Know the **key geographical words** for each example.
If a diagram would add to your response then draw one, just remember to add **annotations** to make it count.
Know **specific information** for each example (facts, figures, dates)
BUG the exam questions. (**B**ox command words, **U**nderline key information, **G**lance back at the question) to stay focused.

PAPER 1: The Physical Environment

Topic 1: Changing Landscapes of the UK
Located example = Holderness Coast
Located example = River Tees
Topic 2: Weather Hazards and Climate Change
Located example developed country = Hurricane: Hurricane Sandy
Located example developing country= Tropical cyclone: Typhoon Haiyan
Located example developed country= Australia drought
Located example developing country= Namibia drought
Topic 3: Ecosystems, Biodiversity and Management
Located example in a named region= TRF: Amazon, Brazil.
Located example in a named region = Deciduous woodland: Wyre Forest, West Midlands.

PAPER 2: The Human Environment

Topic 4: Changing Cities
Case study developed country = Manchester
Case study emerging country = Sao Paulo
Topic 5: Development
Case study developing country = Tanzania
Topic 6: Resource Management and Energy
Located example developed country= Norway
Located example developing country= Bhutan

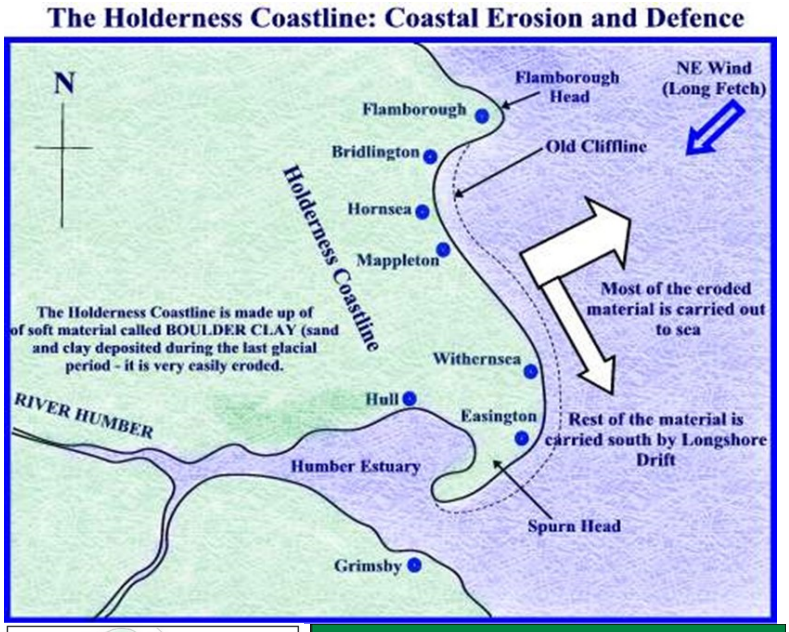
Command words and their meaning

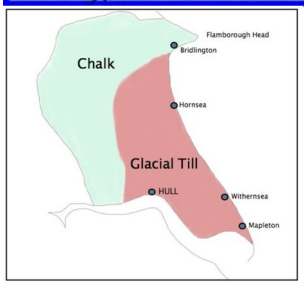
Increasing difficulty & expectation

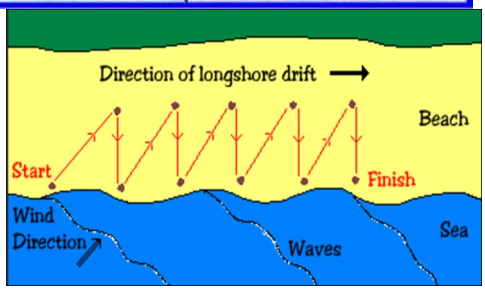
Command word	Definition
Identify/State/Name	Recall or select one or more pieces of information.
Define	State the meaning of a term.
Calculate	Produce a numerical answer, showing relevant working.
Draw/plot	Create a graphical representation of geographical information.
Label	Add a label/labels to a given resource, graphic or image.
Describe	Give an account of the main characteristics of something or the steps in a process. Statements in the response should be developed but do not need to include a justification or reason.
Compare	Find the similarities and differences of two elements given in a question. Each response must relate to **both** elements, and must include a statement of their similarity/difference.
Explain	Provide a reasoned explanation of how or why something occurs. An explanation requires a justification/exemplification of a point. Some questions will require the use of annotated diagrams to support explanation.
Suggest	Apply understanding to provide a reasoned explanation of how or why something may occur. A suggested explanation requires a justification/exemplification of a point.
Examine	Break something down into individual components/processes and say how each one individually contributes to the question's theme/topic and how the components/processes work together and interrelate.
Assess	Use evidence to determine the relative significance of something. Give consideration to all factors and identify which are the most important.
Discuss	Explore the strengths and weaknesses of different sides of an issue/question. Investigate the issue by reasoning or argument.
Evaluate	Measure the value or success of something and ultimately provide a substantiated judgement/conclusion. Review information and then bring it together to form a conclusion, drawing on evidence such as strengths, weaknesses, alternatives and relevant data.

The Holderness Coast—East Riding of Yorkshire

A distinctive UK coastal landscape: formation, features and change.







Formation

The coast of East Yorkshire, known as Holderness), has one of the **fastest eroding** coastlines in north-west Europe, with cliffs eroding at up to **1.7 metres** per year. It is a **discordant** coastline.

The coastline stretches 50km from the hard chalk headland at Flamborough Head to the depositional feature of the spit at Spurn Point. The material is moved along the coast by the transportation process of **longshore drift.**

The coast is made up of a very soft rock called **boulder clay**, which is easily eroded by the sea, and when saturated by rainfall, is prone to slumping and landslides.

Features

At Flamborough Head (chalk) you find lots of erosional features including caves, arches, stacks, stumps and wave cut platforms. 4 processes of erosion—hydraulic action, attrition, abrasion and corrosion. **You need to know what happens during each process.** Much of the coastline is boulder clay which is very easily eroded and over the years 30 villages have been lost to the sea including Hotton and Hyde. Hard and soft engineering is used to protect parts of the coast depending on the cost/benefit analysis. At the end of the coastline you find the depositional feature of Spurn Point, a spit. This itself is moving and protected by hard engineering.

The coast suffers from **coastal recession**; the movement of the coastline backwards due to the work of the sea.

Change along the coastline

A Shoreline Management Plan is in place to help reduce the problem of erosion and to help manage change. It includes and mixture of management techniques as detailed below.

Managed retreat (soft engineering) for areas with no major settlements or infrastructure, i.e. caravan parks and farmland.

Hold the line techniques (hard engineering) at key settlements

- 3.7km of seawall and groynes at Bridlington
- Groynes, sea wall and rock armour used at Hornsea.
- Rip rap and 1.67 km of sea walls at Hornsea, with areas of higher sea wall to protect key tourist facilities.
- Rock groyne at Mappleton. Made erosion 3 x faster south of this.
- Curved sea wall and rock armour at Withernsea.

Advance the line techniques at Easington gas terminal. This is a really important economic infrastructure providing North Sea gas to much of England. A 1km long revetment was built along the base of the cliff using 133,000 tonnes of rock. Also use soft engineering here in the form of beach re-nourishment.

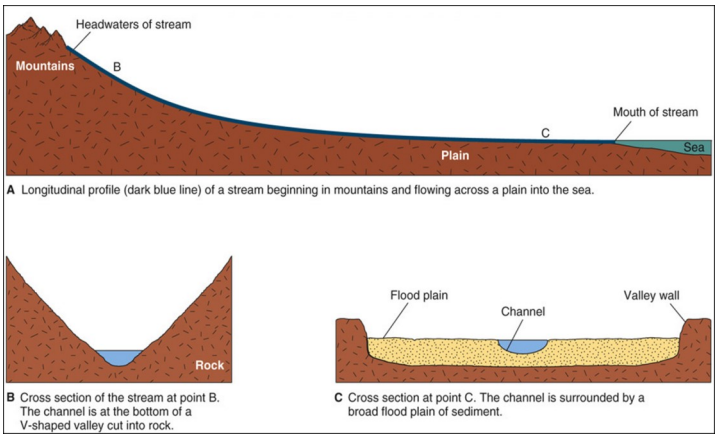
Further reading

BBC bitesize link to coasts – http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/

For a named example, **examine** how the distinctive coastal landscape is the outcome of physical and human processes.

The River Tees—Northumberland

A distinctive UK river landscape: formation, features and change.



A Longitudinal profile (dark blue line) of a stream beginning in mountains and flowing across a plain into the sea.

B Cross section of the stream at point B. The channel is at the bottom of a V-shaped valley cut into rock.

C Cross section at point C. The channel is surrounded by a broad flood plain of sediment.

Long profile of a river

The upper course—towards the top. Here you will find V-shaped valleys interlocking spurs, vertical erosion

The middle course. The river gets wider and the profile less steep. You may find waterfalls and meanders here.

The lower course. The flattest part of the rivers course where you will find the floodplain, estuary, meanders and the mouth. It is this part of the river where most human development can be found.

Features

Source = Cross Fell in the Pennines 800masl. Receives over 2000mm rain each year. The geology here is limestone with a top layer of peat which is impermeable for the most part due to it being so saturated. The slopes here are steep which allows for rapid surface run off.

Mouth = North Sea 160km away from the source.

Meander = Yarm

Major cities along the course—Middlesbrough, Stockton on Tees.

Waterfall = High Force—tallest in UK. This is made up of resistant igneous rock called Whin Sill.

Explain how river characteristics change as a river flows from its source to it mouth.

Process	Impact on the landscape
Industry	The river has been dredged to increase the channel size and improve navigation. In 1810 the river was straightened to cut off two meanders. This allowed the flood water to reach the sea more quickly and for ships to navigate further up the course.
River erosion and deposition	The river erodes and transports material forming meanders and floodplains. The sediment is deposited at the estuary where large amounts of mud are found. Rivers deposit sediment when they lose energy.
Human development	Many settlements have developed along the course including the town of Yarm which sits within the meander. A £2.1 million pound defence scheme protects the town from erosion. At the mouth there are numerous chemical works and ship building yards.
Hard engineering	Expensive. Works against nature. Costly to repair. There are 9 reservoirs in the entire drainage basin, the largest being Cow Green (1971) These not only provide a water supply to the area but also store large quantities at times of heavy rainfall. The Tees barrage reduces the risk of flooding by the river and the sea. It was built in 1995 and cost £54 million. It regulates the flow of water and also acts as a barrier to prevent tidal flooding. Around the barrage 100, 000 trees and shrubs have been planted.

For a named example, **examine** how the distinctive river landscape is the outcome of physical and human processes. (8)

Hurricane Sandy (October 2012)—USA

Tropical cyclone in a more developed country: impacts and responses

What caused it?

A cluster of thunderstorms mixed together over the warm (27+ºC), deep Atlantic Ocean, to form a low pressure system. Trade winds then caused the storm to start to spin (this is known as the Coriolis effect caused by the Earth's rotation). Warm air continued to rise, increasing the storm strength, and reached higher altitudes; as the warm air rose faster, the storm sucked cooler air downwards, adding to the intensity of the low pressure system. The eye of a hurricane has calm winds surrounded by a vortex of strong winds.

Where was affected?

Sandy hit the Caribbean Islands of Jamaica (24th Oct), Cuba (25th Oct) and the Bahamas (26th Oct). It then unusually curved north-westwards and headed to the north-eastern coast of the USA; Sandy made landfall as a category 1 hurricane near Atlantic City, New Jersey, during the early evening of 29th Oct. Sustained surface winds at landfall were close to 80 mph with gusts between 85 and 95 mph.

It was the 2nd costliest disaster at $74 billion

It cost 75 billion US dollars in damages.	20,000 airline flights were cancelled	9 million power outages
600,000 businesses and homes were destroyed. 250000 cars were destroyed by floodwater.	Around 90% of beaches in New York and New Jersey were damaged; on average the beaches were 9-12 metres narrower after the hurricane.	People were forced to move in to shelters of with relatives following the storm.
In areas such as New York and New Jersey, untreated sewage was washed into public drinking water, threatening human health.	1.5 million litres of oil was spilt into Arthur Kill (the stretch of water between New Jersey and Staten Island, New York), damaging wildlife habitats and killing fish and birds. Salt water contamination was also an issue.	Approximately 1.5 billion litres of sewage was released into the Raritan River in New Jersey.
Extensive erosion to the Delaware Bay beaches affected the breeding / nesting grounds of horseshoe crabs.	285 people died in total, 147 in the USA.	The streets of New York were flooded, as was the subway.
Peak storm surge was up to 3 metres, amplified by spring tides to 4.5 metres	In West Virginia over 1m of very wet, heavy snow fell causing huge disruption.	The New York City marathon was cancelled resulting in a loss of income for many businesses

RESPONSES: Individuals

- After the hurricane people moved in with relatives and used shelters.
- People rebuilt their homes but used builders rather than doing it themselves.
- American citizens claimed on their home insurance.
- People temporarily relocated to evacuation centres such as schools and community centres. Schools and public transport services closed down and many flights were cancelled

RESPONSES: Organisations

- The Canadian Rivers Institute helped to restore Delaware Bay beaches by clearing rubble and replenishing sand.
- The Red Cross had 17,000 trained workers, providing over 300 response vehicles, 74,000 overnight stays, and 17 million meals and snacks.
- AmeriCares, an American charity, quickly sent teams of relief workers to hard-hit areas. 450,000 people benefitted over the course of 2 years.

RESPONSES: Government

- US government approved US$60.3 billion in aid to the victims.
- The USA, a developed country, invested more in tropical cyclone prediction, planning and protection thus reducing impacts significantly.
- Department of Agriculture promised US$6.2 million for food aid, infrastructure and to help repair farmland and floodplains.
- In the following 2 years, AmeriCares has provided US$7.1 million in aid benefitting 450,000 people.
- The President of the USA, Barack Obama, and the authorities appealed to people to stay calm and out of harm's way. the police evacuated hundreds of thousands of people from low-lying coastal areas most vulnerable to Hurricane Sandy
- FEMA and the Army Corps of Engineers worked with state and local governments to quickly reopen most of the beaches in New Jersey.

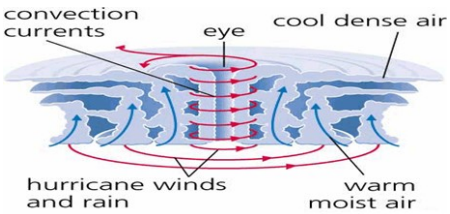
Assess the following statement:

Tropical cyclones present a greater threat to people living in developing countries rather than those living in developed countries.

Explain one economic impact of tropical cyclones (hurricanes and typhoons) on a developed country.

Typhoon Haiyan (8th Nov 2013)—Philippines

Tropical cyclone in a developing country: impacts and responses



What caused it?

A cluster of thunderstorms mixed together over the warm (27+ºC), deep Pacific Ocean, to form a low pressure system. Trade winds then caused the storm to start to spin (this is known as the Coriolis effect caused by the Earth's rotation). Warm air continued to rise, increasing the storm strength, and reached higher altitudes; as the warm air rose faster, the storm sucked cooler air downwards, adding to the intensity of the low pressure system. The eye of a hurricane has calm winds surrounded by a vortex of strong winds.

Where was affected?

The Philippines are located in south east Asia. Capital city is Manila. Typhoon Haiyan hit the Philippines on the 8th November 2013. It was classified as a super typhoon – category 5 typhoon which means that wind speeds were over 155mph. The damage caused by this category typhoon is catastrophic. Sustained wind speeds were 196mph and the associated storm surge was 5.2 metres.

Impacts (SEE)

- 6021 people lost their lives.
- Over 4 million people left homeless. Over 16 million people affected.
- People who were sheltering in the Tacloban City Convention Centre (the main evacuation point) died as the storm surge entered the hall.
- Thousands of coconut trees and paddy fields destroyed leaving 10,000 people without an income.
- Mangrove ecosystems that fishermen rely on were destroyed. Channels and waterways were blocked leaving little access to sea as well.
- 5.2 metre storm surge destroyed the terminal building at Tacloban airport.
- Small scale farmers out of business as land and crops were ruined.
- Debris covering roads hampering the clean up and rescue efforts.
- All buildings that were not made of concrete were destroyed.

RESPONSES: Individuals
After the hurricane people moved in with relatives and used shelters.
People rebuilt their homes but used builders rather than doing it themselves.
American citizens claimed on their home insurance.

RESPONSES: Government
Government response was slow and people turned to **looting** for food.
Airports and harbours were closed so access was limited. Government could not deliver aid.
Military deployed onto the streets of Tacloban to try and regain law and order.

RESPONSES: Organisations
The EU gave $4m in emergency funds and the UK gave $8m in aid. Food aid and tarpaulin was distributed throughout Tacloban.
The WHO (World Health Organisation) co-ordinated the health and medicine effort.
NGOs sent in supplies such as diggers, land rovers and heavy lifting gear from the UK and USA.

Assess the following statement:
Tropical cyclones present a greater threat to people living in developing countries rather than those living in developed countries.

Explain one economic impact of tropical cyclones (hurricanes and typhoons) on a developing country.

Namibia (2013)

Drought in a developing country: impacts and responses

What is a drought?

"A drought is a period of below-average precipitation resulting in prolonged shortages in water supply."

Droughts can occur in many places of the world, not just arid environments. The main characteristic of a drought is that it is a GRADUAL reduction in the amount of available water supply. They can be UNPREDICTABLE and sometimes UNEXPECTED. This makes them dangerous!

One in three people were at risk of malnutrition, especially expectant mothers, young children and the aged.

778,000 Namibians were either severely or moderately food insecure.

Harvest yields were 42% less than in 2012, which meant severe food shortages.

Impacts

Savannah grassland changes to inedible grass and plants that livestock cannot live on.

Large areas of Namibia are changing from savannah grasslands to desert due to the lack of rainfall.

Only drought-resistant plants can survive in "desert" conditions.

Remember that impacts can be classed as social, economic or environmental!

RESPONSES: Individuals
People migrated to towns in search of work.
In one village, about 350 people left in search of water and grazing land for their cattle.
Farmers been forced to sell their livestock.

RESPONSES: Organisations
UNICEF appealed for US$7 million to support their efforts to respond to the needs of women and children.
The International Red Cross and Red Crescent asked for US$1.5 million.
Algeria donated US$1 million in food aid.
The Lutheran Church provided basic food and clean water to those communities with no access to governmental distribution points.

RESPONSES: Government
President Pohamba declared a national state of emergency on 17th May 2013 and requested US$1 million in international support.
Government pledged £13 million in relief for the worst-hit households.
The Ministry of Agriculture, Water and Forestry (MAWF) told struggling farmers to sell their livestock while they were still in good condition.
The MAWF gave a subsidy to struggling farmers for the cost of transporting their livestock to emergency grazing areas.

Assess the following statement:
Drought presents a greater threat to people living in developing countries rather than those living in developed countries.

Explain two reasons for the link between agriculture and drought.

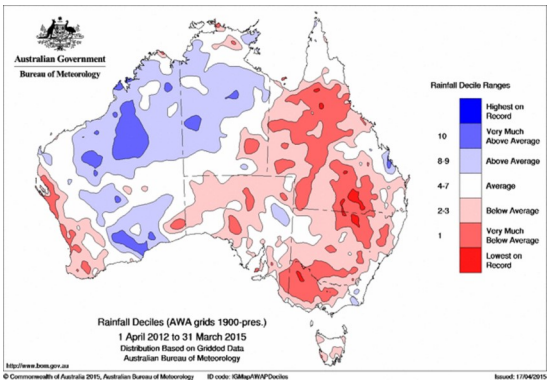
Australia (2015)

Drought in a developed country: impacts and responses

Drought = A period of below average precipitation resulting in prolonged shortages in water supply.

What caused this drought?

- 2015 was Australia's fifth warmest year on record.
- Strong El Niño, comparable to the El Niño events of 1997–98.
- Low rainfall since 2013 contributed to the drought with nationally-averaged rainfall 5% below average for the year, at 443.7 mm.
- Most affected states included Queensland and Victoria.

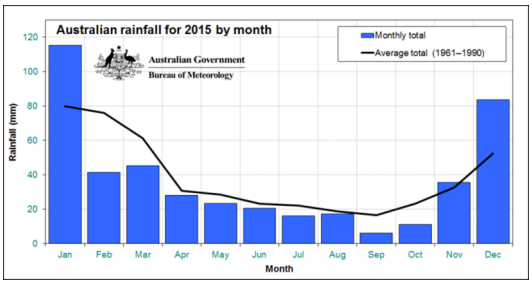


Impacts

Children and other vulnerable groups showed signs of malnutrition such as sores on their bodies.

Debt levels for farmers increased by 25-50%. Half of farmers saw their income cut by half due to severe drop in agricultural productivity.

Farmers are having to reduce their herd numbers (destocking) and pull back grain planting.



40% of Longreach's workforce have been made redundant due to a reduction in business income.

Fertile pastures were turned into desert wasteland.

15% increase in suicide risk for rural males aged between 30 and 49.

Remember that impacts need to be classed as social, economic or environmental!

Increased economic insecurity and reliance on donated food and resources.

Responses: Individual, Government and Organisations

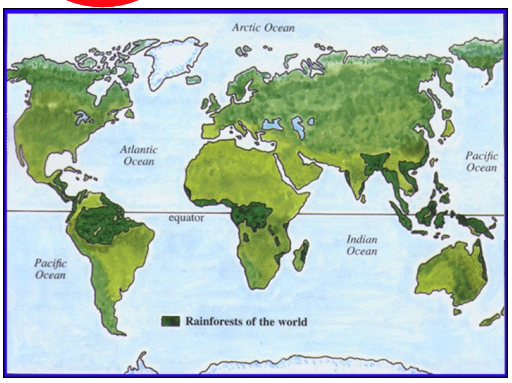
The government invested millions in infrastructure. That included a pipeline that would deliver water over mountains and a water treatment plant.	The Drought Angels organised a huge road relief program to bring feed to farmers in what was billed as the biggest hay drive on the planet.	State governments applied water restrictions, and fines were implemented to people who didn't follow the restrictions.
Citizens invested in grey water systems, where waste water from sinks, taps, showers and baths is diverted into the garden to water plants. 1 in 3 citizens of Melbourne also invested in rainwater holding tanks.	By 2010, businesses and residents in Melbourne had cut their water use to 41 gallons per person, half of what it was in 1997 before the drought began.	Detailed list of water restrictions with alerts given about the severity. Included rules over use of hoses, sprinklers, swimming pools, and grey water , etc.
NGO's (Australian Red Cross) offered training and education to farmers to allow farming practices to adapt during times of drought.	Government invested more than $6 billion in the construction of the Wonthaggi Desalination Plant, which to this day has never been used.	The government invested heavily in increasing the use of recycled water for both the agricultural and urban sectors.

Assess the following statement:
Drought presents a greater threat to people living in developing countries rather than those living in developed countries.

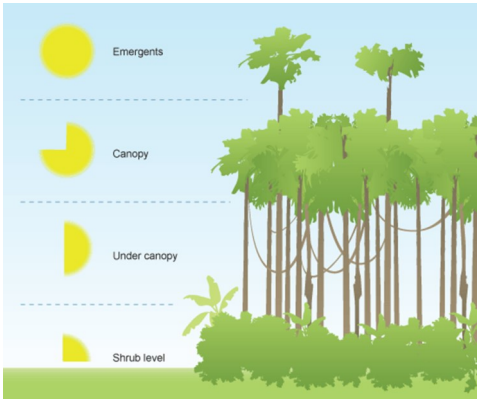
Explain two reasons for the link between agriculture and drought.

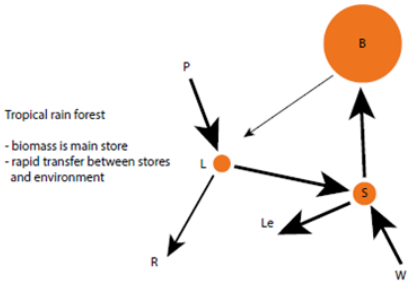
Tropical Rainforests—Amazon Rainforest

Sustainable management of a rainforest in a named area



Where is this biome (large-scale ecosystem)?
Found in a narrow belt either side of the equator. They experience a tropical climate which consists of temperatures of 27-30°C and heavy rainfall, over 2,200mm a year. It rains every day (convectional rainfall) and has a 365 day growing season. **Two processes** are vital for the balance in the rainforest. These are the **water cycle** and the **nutrient cycle** (see the diagram below). The Tropical Rainforests you have studied are the Amazon found in Brazil (in South America), and Costa Rica which is located in Central America.





Products from the rainforest

- Provides basic needs for indigenous tribes such as the Yanamami.
- Many medicines are round in the rainforest such as rosy periwinkle used for leukaemia treatment, and many future discoveries in medicine are likely to come from rainforest species.
- 90% of all plant and animal species are found here.
- Lots of food stuffs including bananas, coffee and black pepper.
- They maintain the global climate as huge **carbon sinks absorbing carbon dioxide.**

Emergents - or forest giants, 50 metres or taller. These trees are usually supported by buttress roots. **Canopy** - This is a dense layer forming almost complete cover. Trees 20 - 30 metres tall include many hardwoods such as mahogany. **Under Canopy** - This dark and humid area contains saplings between the trunks of larger trees. **Shrub Layer** - This contains small trees and shrubs especially near rivers. **Forest Floor** - This is covered with ferns and a deep litter of fallen leaves & branches.

Causes of deforestation (removal of trees on a large scale)

- **Resource extraction/mining**: Tropical rainforest has been cut down to build the largest iron ore mine in the world – Carajas mine in Para state NE Brazil. It provides iron ore and other minerals, high in demand in developed and emerging economies.
- **Agriculture.:** Soya and palm oil plantations (soya is exported to Europe as a protein based food, and oil from the plant is used in biofuels).
- **Population pressure**: Huge increases in the Amazon which is encroaching into the rainforest. Parauapebas is a town that has grown from 154,000 to 220,000 since 2010 largely due to the iron ore mine.

During the past 40 years, close to 20% of the Amazon rainforest has been cut down. An additional 20% of the trees could be lost over the next two decades.

Positive Impacts

•Profits from Carajas have helped Brazil to settle other foreign debts and long term jobs have been created in the mine. One of the BRICS.
•The mine has encouraged other industries to locate in the area creating multiplier effect (i.e. more jobs, increased spending, improved economy).
•Soya plantations create jobs for the poorest in Brazilian society. Large scale counter-urbanisation has occurred from cities like Sao Paolo as a result of the opportunities to gain an income from the Soya industry.

Sustainable Management: The Amazon Rainforest

1. **Afforestation**—replanting the rainforest as is the hope in the Carajas area once production has finished. Very small scale and not overly sustainable as the nutrient cycle has been destroyed in the meantime.
2. **Biospheres, National Parks and Zoning.** For example the Manu biosphere which doesn't allow any development in a specific area. Zoning is similar to what happens on the coast.
3. **Ecotourism**: Using traditional methods and responsible tourism such as EcoBrazil. Local cultures can be protected and allows for tourists to be educated on the sustainable management for future generations.
4. **NGO projects**: for example FUNDECOR which works with 400 local landowners to manage 46,000 hectares of land sustainably.
5. **Consumer action**: Refusing to buy products that come from unsustainable sources. Can be done on an individual and national level. For example, WWF and Greenpeace successfully upheld a moratorium on palm oil from the Amazon, thus stopping further destruction as Sainsbury's and McDonalds amongst other refused to buy from these sources.

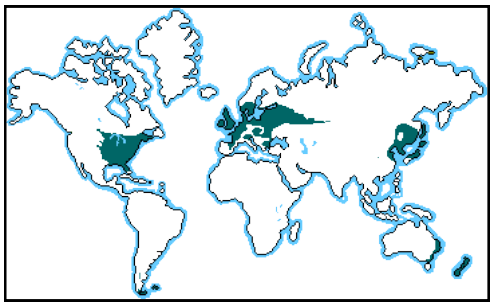
Sustainability: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs."

Assess the following statement:

"Climate change presents a greater threat to tropical rainforests than it does to deciduous woodlands." (12)

Temperate deciduous woodlands—Wyre Forest

Sustainable use and management of deciduous woodlands in a named region

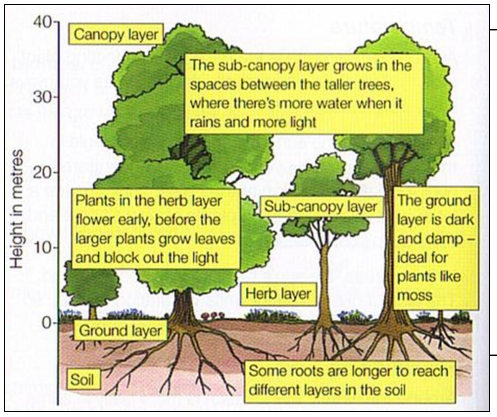


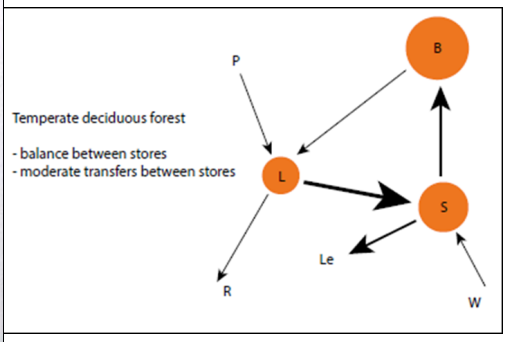
Where is this biome (large-scale ecosystem)?

Mainly found north of the Tropic of Cancer (between 30° and 60°) in countries like the USA and the UK. It has a temperate climate which consists of 4 seasons, temperatures between 4 and 17°C and an annual rainfall of 1,000mm. Trees lose their leaves in autumn which maintains high levels of nutrients in the soil (see the **nutrient cycle** diagram below) and reduces transpiration in winter to conserve energy. The deciduous woodland you have studied is the Wyre Forest located in the West Midlands in the UK.

Goods and services provided

- Timber for construction and furniture.
- Short rotation coppice willow to provide biomass for domestic heating
- Wood as a fuel for Drax power station (use of short rotation coppice willow mixed with coal in one of its burners
- Public access for walking, cycling, jogging and horse-riding.
- Adventure activities such as Go-Ape.





Canopy: Broad-leaved trees such as oak and ash which capture sunlight easily in spring and summer.
Sub-canopy: Trees such as rowans and dogwoods, and large shrubs such as rhododendrons.
Field or Herb layer: Plants in this layer flower early in the year before the trees in the canopy have grown their leaves.
Ground layer: This area is dark and damp; ideal for mosses and lichens. Decomposition of fallen leaves.

Causes of deforestation (large scale tree clearance)

Economic:

1. **Agricultural change**—Over the centuries, a growing population led to a growing demand for food. The UK's forested areas declined to a low of 5% in 1919 (after WW1). Even in the 1980s, landowners in Kent were still being greedy by clearing trees (including ancient woodland) to make way for intensive farming.
2. **Timber extraction**—For centuries, timber has been used for house building and fuel. English oaks were used in ship-building, including navy ships. Used to build trenches in WW1. The rising popularity of wood-burning stoves has led to an increased demand for timber again.

Social:

1. **Urbanisation and population growth**—Greater demand for housing as the population grew (trees needed for timber roofs/beams to support roofs). Forests cleared to make way for towns, especially in the north of England during the Industrial Revolution, and then for the suburbs as towns/cities expanded.

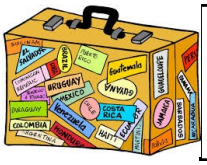
Sustainable use and management: Wyre Forest
(managed by the Wyre Forest Landscape Partnership—WFLP)

1. **Woodland management:** Areas previously planted with conifers will be gradually restored to woodland, predominantly with oak. Silver birch will also be encouraged, along with hawthorn and holly. Deer population will be carefully controlled.
2. **Wildlife management:** Wildlife-rich meadows and orchards will be extended. Invasive species, such as Himalayan balsam, will be removed. Any cattle-grazing will be carefully monitored.
3. **Community management:** Local residents encouraged to take part in conservation work. Community woods in which local people can cut their own firewood.
4. **Leisure and recreation management:** Forest to provide a place of recreation for people of all ages and abilities. Forestry Commission opened up walking trails, cycle paths and a play area. Visitor centre at Callow Hill to educate people about the forest.
5. **Education:** Wyre Forest Centre now a hub for sharing knowledge about sustainable use and management of deciduous woodlands. Children and adults from local communities, especially Birmingham, have been introduced to woodlands and wildlife through interactive displays and workshops. The WFLP provides opportunities for forest industries apprenticeships.

Sustainability: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs."

Assess the following statement:

"The sustainable management of tropical rainforests is a greater concern than that of deciduous woodlands." (12)



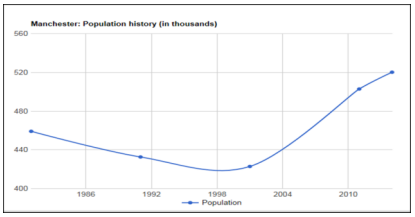
Manchester

A case study of a major city in a developed country

Site – the land the city is built on.
Situation – where the city is compared to other physical and human features around it.
Connectivity – the way the city is connected or linked to other settlements around it.

Factors leading to the growth:

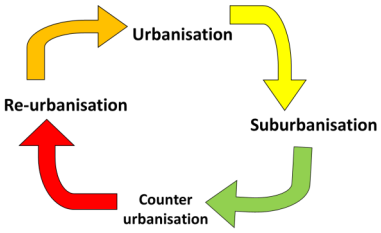
- Rivers Irwell and Irk
- Surrounded by hills—Pennines.
- Industrial revolution—Cottonopolis
- Transport links—M1 & M62
- Tourism—3rd most visited city
- Leading universities like Manchester University



Urbanisation: The increase in the number of people living in towns and cities.

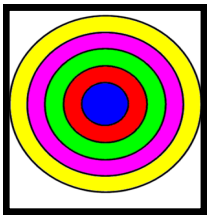
CBD
Inner City
Inner Suburbs
Outer Suburbs
Green Belt

Re-urbanisation: The movement of people back into the city, usually after the city has modernised.



Suburbanisation: The increased movement of people / services and industries from the centres of inner urban areas outwards, towards and onto the edges of built-up areas.

Counter-urbanisation: The movement of people from cities to the countryside.



CBD:
Commercial centre. It has the tallest and oldest buildings. It contains the main shops, offices and financial institutions of the urban area. It has high end shops such Harvey Nichols and Selfridges. It is the most accessible part of the city due to transport links. Land values and densities are high. In 1996 the IRA bombed the centre costing £1.2 billion in damages.

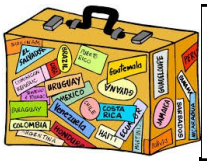
Inner city:
Contains high density 19th Century housing; linear and back to back. Function is residential. This area experiences social and economic problems. Moss Side suffered serious economic decline from deindustrialisation. Areas of Moss Side have been redeveloped or regenerated. The former Manchester City F.C. Maine Road site is being redeveloped as Maine Place, primarily as 2, 3 and 4 bedroom houses.

Suburbs:
Private houses built during the inter-war period (1930's). Semi-detached/detached, characterised by front and back gardens, garages and bay windows. The majority are owner-occupied, although there are some large estates of social housing. Usually there are parks or other open spaces here, as well as hospitals and schools. Didsbury is 5 miles from the City Centre and in the boundary of the M60 ring road.

Urban-rural fringe: mixture of land uses. This includes residential areas, recreational facilities such as golf courses and farming.
Contains better quality housing. 8 miles SW of Manchester City Centre. It is an affluent commuter town mainly due to its transport links. Altrincham's interchange for Metrolink is a key station providing a tram to Manchester City Centre every 6 minutes.

Examine the impacts of migration on different parts of your chosen city.

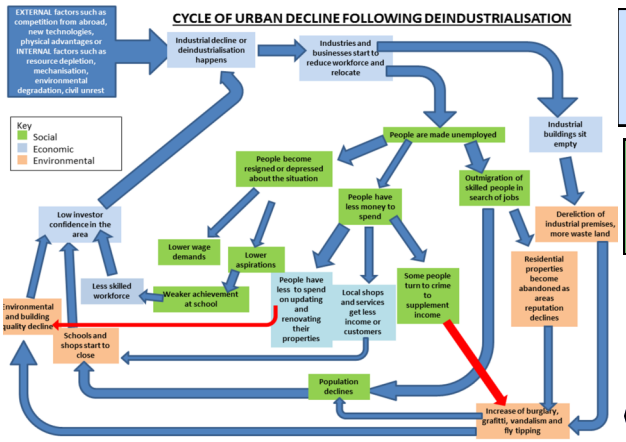
What is the difference between site and situation of a city. Compare Manchester to Sao Paulo; how do they vary?



Manchester continued...

A case study of a major city in a developed country

Deindustrialisation in Manchester occurred across the city on a large scale in the 1960s and 1970s leading to wide scale decline and deprivation. There was increasing competition from other countries such as Japan that could produce the cotton cheaper and more efficiently than the UK. A spiral of decline began with a whole array of social and economic problems. By the 1980s the cotton industry in the UK was over.



Galt Toys closes their factory (50 jobs) to move manufacturing to Far East.

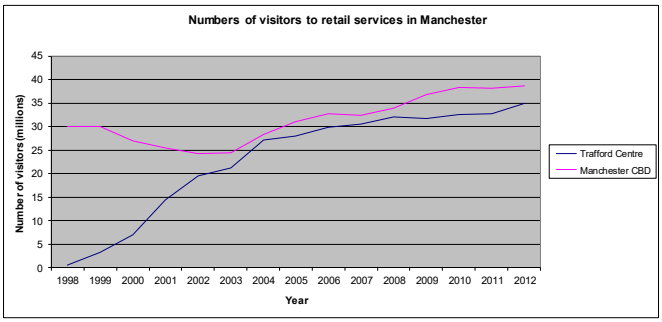
Between 1971-81 Manchester's population fell by 17.5%.

High crime rates in the inner city, with burglary, juvenile nuisance and domestic violence all substantially above the national average.

Between 1971-81 over 50, 000 jobs were lost over the whole of Manchester.

Spiral of decline.

Vicious cycle.



In 1998, the Trafford Centre opened on a site near Dumplington, on the rural-urban fringe of Manchester. The planning process was one of the longest in UK history due to concerns about the effect on smaller retailers in the Manchester area. Eventually, the decision in favour of the development was made in 1996.

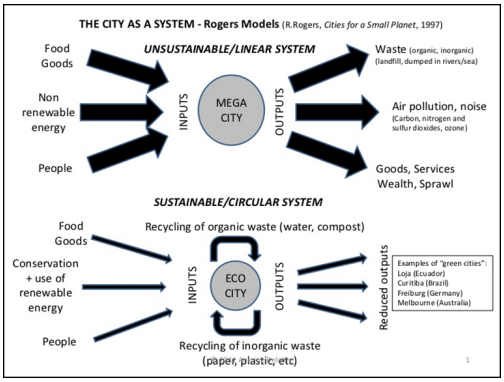
10% of the UK population lives within a 45-minute drive of the shopping centre. This convenience of access, as well as changes in the way people shop, meant that more shops, restaurants and leisure facilities are visited in the same trip, which lead to instant success for the Trafford Centre.

By contrast, shops in the CBD, such as the Arndale centre suffered from the competition with the Trafford Centre. Lack of easy parking, issues such as busy roads and dark, narrow streets, a lack of shelter from the weather, and more dispersed (spread out) shopping meant a decline in the number of people shopping in the CBD.

The 2002 Commonwealth Games in Manchester proved a turning point for the CBD. Investment in public transport in order to make Manchester City Centre more easily accessible for athletes and audiences also meant shops saw a return to improving visitor numbers.

City Centre is rebranded as a high end shopping destination in order to compete with the Trafford Centre. Expensive stores such as Harvey Nichols, Selfridges and Armani have located in the CBD. The city centre has been pedestrianised in many areas to make shopping a more pleasant experience. Cinemas and restaurants have also opened in the CBD.

The Arndale now has 38 million visitors per year while the Trafford Centre attracts 34 million a year. Future redevelopments have been planned for the area of the CBD containing the Town Hall, and a ferry link from the Trafford Centre to the CBD via the Manchester Ship Canal.



Sustainability

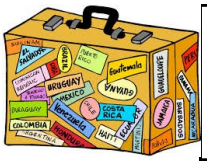
Figure 3

Migration to Manchester over time

1750—Irish—mainly to work in the growing cotton factories.
1950 – 1971 Irish, Caribbean, East African Asians from Kenya, India and Pakistan
1971 – 2003 Conflict across the world led to an influx of migrants from Bangladesh, Vietnam, Iran, Iraq, Afghanistan, Rwanda amongst others.
2004—A8 countries
2007—Spanish due to recession
2011—Chinese—access to education in Manchester

Examine the impacts of migration on different parts of your chosen city.

What is the difference between site and situation of a city. Compare Manchester to Sao Paulo; how do they vary?



Sao Paulo

A case study of a major city in an emerging country

Site – on a hilly plateau approx. 820m above sea level.
Situation – in SE Brazil, 70km west of Atlantic Ocean, about 1,000km south of capital, Brasilia.
Connectivity – motorway (Rodovia dos Imigrantes) and railway link it to the port of Santos 70km to the SE. Has 2 major international airports connecting to rest of world.

CBD: Business and residential functions. Many buildings built in 19th century. Centro Velho = home to financial sector. Centro Novo = shopping, hotels, and culture (museums, theatres), wide boulevards and high-rise residential blocks for the wealthy (many now moved out). The poor live in cortiços (vacated office buildings).

Inner city: Some industry but mainly residential (first favelas built here). Most buildings constructed in 19th and early 20th centuries. Bela Vista = Italian migrants. Liberdade = Japanese migrants. Wealthy moved from CBD to the Jardins. Home to Paraisopolis; the largest favela in Sao Paulo (home to 43,000).

Suburbs: Residential and commercial functions. Wealthy live in Morumbi with high-security houses, shopping centres such as Cidade Jardim Mall, government headquarters, good hospitals and schools (inc. the university). Located right next door to the favela, Paraisopolis. 20th century developments.

Urban-rural fringe: Residential function. Many favelas developed in 1980s due to rapid population growth. Wealthy live in gated communities (mini-cities on the outskirts). Many use helicopters to commute to work in the CBD (e.g. Alphaville which is patrolled by over 1,000 armed guards).

WHY?

1. International migration; first settlers came from Portugal, main group in the city is now Italian attracted by the jobs.
2. National migration (from NE Brazil) - pushed out due to drought and lack of land for farming; pulled to Sao Paulo for better QoL.
3. High rates of natural increase due to better healthcare (lowering death rates) and also many citizens being of child-bearing age (increasing birth rates).
4. Economic investment and growth in 1950s and 1960s.

IMPACTS OF MIGRATION

1. Culturally diverse as many ethnic groups.
2. Young population and high birth rates.
3. Development of favelas (as high demand for housing) and all the problems associated with favelas……
4. Pressures on schools and hospitals in poorer areas.
5. Rapid population growth —> rapid urbanisation.
6. High unemployment due to competition for jobs.
7. Greater inequality (bigger gap between rich and poor)
8. Increased traffic congestion and pollution.

Sao Paulo has a rapid population growth!

SOLUTIONS: Top-down approach

Cingapura Housing Project

14,000 new homes built in blocks about 10 storeys high. Residents expected to pay a rent of about US$26 a month.

+ Houses had clean water supply and proper sanitation
+ Built on same land as favelas so residents knew the area
+ Leisure areas were included in the developments

- Many residents couldn't afford the rent
- Favelas demolished to build the new blocks
- Forced on the inhabitants who have no say in what is built

SOLUTIONS: Bottom-up approach

Self-help scheme in Santo Andre

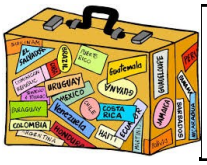
Improved infrastructure and services - e.g. health care, literacy courses for adults, recreational facilities, upgraded favelas, credit facilities for small-scale entrepreneurs.

+ Community included in decision-making
+ Same type of housing but improved and with services
+ Improvements help to further improve quality of life

- Scheme takes a long time to get started
- Many different people involved, so hard to agree on how the money should be spent

You have studied a major UK city and a major city in a developing or emerging country.
Evaluate which of these cities have been most successful in improving the quality of life for its people. (8)

You have studied a major UK city and a major city in a developing or emerging country.
Assess the impacts of migration on these cities. (8)



Tanzania

A case study of development in a developing country

Site – 13th largest country. Contains Mount Kilamanjaro. Coastline on Indian Ocean. 3 of Africa's Great Lakes.
Situation – East Africa just south of equator. Capital is Dodomo, former capital Dar es Salaam.
Connectivity – English and Swahali are two main languages. Most of the population live in the North or the East. Population of 55.5 million.

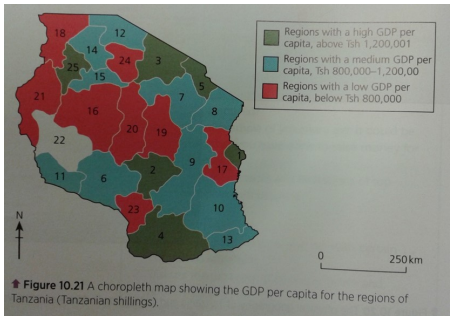
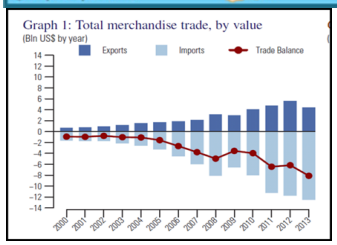
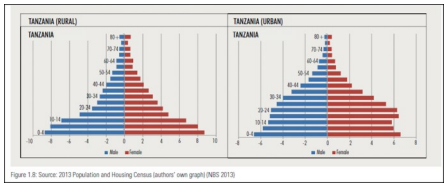


Figure 10.21 A choropleth map showing the GDP per capita for the regions of Tanzania (Tanzanian shillings).

Development varies across the country. The north and the east (core) are more developed with a higher GDP. This is due to the port and the former capital being on the east coast. Central and western Tanzania (periphery) have a low GDP due to remote areas with little infrastructure primarily focussed on the primary industry.

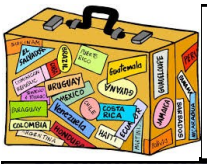


Tanzania is in a trade deficit of $8.1bn
Tanzania imports petroleum oils, motor vehicles and tractors, among others, from India, Switzerland and China, among others. Tanzania exports gold, precious metals and raw produce to South Africa, Switzerland and China.
3rd largest recipient of aid in Africa. Most of this is spent on health and population.



Positive and negative changes to employment sectors.
Aid has been given to farming communities to improve irrigation.
Agriculture is still mostly dependent on the weather.
Foreign investment is attracted into the country due to recent discoveries of gas and oil as well as other mineral deposits
Manufacturing is concentrated on a few goods that are low value.
The share of GDP from manufacturing increased from 18% in 2001 to 22% in 2012
Growth in the number of teachers employed (2013: 22000, 2014: 90000).
Growth in health care workers.
Jobs in the service industry (especially professionals) require a high level skill.
Communications and financial services sector are the fastest growing in the economy (growth rate of 15% between 2003 and 2012).
Quaternary workforce require high level of skills. No employment for low skilled workers.

Public and Private Investment	Changed from socialist to market driven economy. The government still owns a lot of the industries but has actively encouraged private investment. Foreign banks now have 48% of market. Previously, donors (IMF, World Bank) have given funds to develop infrastructure. TNCs are now mine most of the minerals in the country l(gold, copper and silver). The government made it easier for private companies to invest in the country. Domestic companies make up 10% of the mining industry. **Foreign Direct Investment (FDI)**
Population and Life Expectancy	Population is 55.57 million in 2016. 68% live in rural areas. Half of the population are under the age of 15. This has increased over the last 30 years due to the high birth rate. Life expectancy is improving but is still relatively low. Many children still die from malaria and diarrhoea. The death rate is improving due to improvements in healthcare. Working age people are leaving rural areas and migrating to cities for work (economic migrants).
Changes in Social Factors	The gap between the rich and poor is growing. A growing middle class is developing in Tanzania. Approx 10% of the population are part of this group. Their political influence is growing and they are demanding products and services. Primary school fees were abolished and attendance is compulsory. However, in rural areas attendance is about 80%. Class sizes are large 1:66. Literacy rate: 59% in 1988 – 70% in 2015.

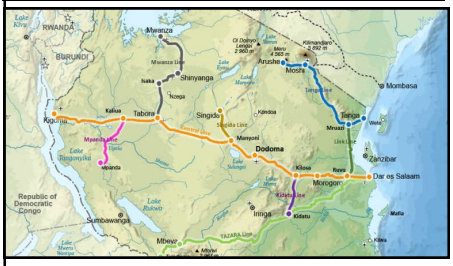


Tanzania continued...

A case study of development in a developing country

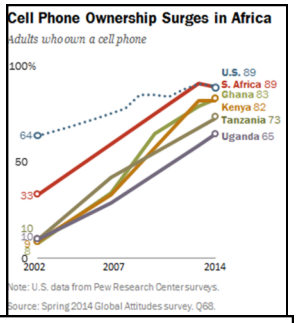
Geopolitics: The influence of factors such as geography and economics on the politics and foreign policy of a state. Tanzania is a member of the EAC (East African Community) which is a intergovernmental organisation composed of 6 countries that aims to make trade easier under a common market.
Tanzania's government sometimes wants to work in isolation due to a strong sense of nationalism (formed from socialist market). However, Tanzania is also developing to become a service hub for landlocked countries through projects like the Tanga railway line and Bagamoyo Port.

Tanzania's rail network.



Foreign Policy and Military Pacts.	There was a war between Uganda and Tanzania in 1978-79 after a military coup in Uganda: Tanzania offered refuge to the ex-president and 20 000 refugees. Though successful the war cost Tanzania **US$500**. Tanzania has also hosted refugees from across central Africa, including Mozambique. This was usually co-funded by the UN. Nearly 1.3 million people sought refuge in western Tanzania. Tanzania supports the Lusaka ceasefire agreement (2010) which aimed to stop conflict in the D.R of Congo by releasing POW, organising a ceasefire and the deployment of peacekeeping forces.
Defence	Tanzania has a small army, navy and air force. 25000 regular personnel and 80000 in reserves. The Navy has 1000 personnel and works on 6 patrol/coastal vessels. They work with the UN on peacekeeping missions in countries such as Lebanon and Sudan. There is a National Service: only compulsory when people want to work in government or go to university
Territorial Disputes	There is a dispute over Lake Nyasa between Tanzania and Malawi. Malawi argue that the lake was given to them in the 1980 Heligoland-Zanzibar Treaty between Germany and the UK. Tanzania argue that the boundary between the two countries is in the middle of the lake (half and half owned). In 2012 a Malawi gave a British company the right to explore the lake for oil and brought the issue up again (and it still hasn't been resolved!)

Technology: The government has invested over $189 million on laying the national fibre optic network. This project is known as the National ICT Backbone Project. Mobile phone usage has also increased rapidly recently. Connection to the internet currently stands at 10% but the government has recognised the need for growth in this area to aid their development



Improvements in life expectancy.

Rural areas (periphery) have been left behind with no improvements.

Health care is poor. 40% of jobs are not filled due to a lack of professionals.

Large gap between rich and poor. 2012 – richest 20% accounted for 47% of consumption.

Quarries are left as scars on the landscape.

Improvement to 62% of population now have access to fresh water.

In 2012, 28% of population still lived below the poverty line.

Improvements in GDP.

Gold mining causes toxins to leak into water courses.

Irrigation schemes using appropriate technology allows farmers more efficiency and stops over grazing.

Primary education for all. Above 80% attendance.

Teaching standards are low; 60% of students failed their leaver's exams in 2012.

Increased FDI.

Strong banking, finance and telecommunication sectors.

Electricity in rural areas through bottom-up schemes. Deforestation will slow as wood not used as fuel.

Deforestation leads to loss of habitats and biodiversity.

Over grazing in dry years is also a problem.

There is economic inequality between regions.

Key

Positive
Negative

Social
Economic
Environmental

Management of Development.
QoL has not improved for the majority of the population.
Next 5yrs government pledged to put money into the rural poor and improving QoL. Directing aid into appropriate technology.
Tanzania has helped the UN by housing refugees. The UN is a major player is sustainable development.
Tanzania is ranked 119 out of 174 countries on the corruption index. However, in 2014 there were allegations of corruption in the energy dept. All aid was suspended for a number of months.

Energy Resource Management—Norway

How a developed country has attempted to manage its energy resources in a sustainable way.

What does Norway produce?

Gas: Extracted from under the North Sea. Exported to other countries in Europe. It is the world's 2nd largest exporter of gas.

Oil: Extracted from under the North Sea. Exported to other countries in Europe. It is the world's 6th largest exporter of oil. Only 54% crude oil lost in the extraction (as opposed to 65% from most oil fields). Production has also decreased by approx half between 2001-2013.

Renewable energy: Revenue from oil exports being used to develop renewable industry—99% of electricity from HEP (mountainous country with a reliable rainfall). Wind power now also being developed (building 8 new onshore wind farms).

Enova SF is an organisation that is run and funded by the Norwegian government to promote energy savings in Norway.

Norwegian government targets (by 2020):

1. To reduce greenhouse gas emissions by 30%
2. To increase renewable energy share of total energy consumption to 67.5%

The incentives to reduce energy consumption include...

Households

- No oil boilers.
- 40-60% of the house must be heated by means other than electricity.
- Education programme for children aged 9-12 years.
- Low-energy homes receive loans and grants which are available for energy efficiency measures.
- Heat pumps and biomass boilers get grant support.
- Helpline offering energy saving advice.

Industry

- Grants to install measures for energy recovery or use of waste heat in industrial processes.
- Energy information helpline.
- Grants to install renewables such as heat pumps.

The Alta Dam—HEP scheme in Norway

Transport

- Incentives to buy electric cars (such as low taxes, free parking, no road tolls).
- Tolls on roads to stop people using fossil-fuel cars.
- Higher car tax for less fuel efficient cars.
- Cities which improved their public transport systems get grants from the government.
- Electrification of the country's rail network.

Assess the impacts on people of developing non-renewable and renewable energy resources. (8)

Explain **one** reason why non-renewable energy resources need to be managed. (4)

Energy Resource Management—Bhutan

How a developing country has attempted to manage its energy resources in a sustainable way.

Background information

Landlocked country in South Asia. Population of approximately 750,000. Located on southern slopes of the Eastern Himalayas. Annual rainfall of 500 - 5,000mm. Therefore developed HEP as an energy source.

Little industry in the country (some ecotourism).
Mainly subsistence farmers.
No reserves of oil or gas, so oil to power cars is imported.
About 60% of the population live in rural areas—use fuelwood as their main energy source.

New micro-solar schemes in rural areas

Energy source	Usage
HEP	Currently provides 40% of the government's annual income. The Asian Development Bank has provided money to build more dams and grids to improve electricity to rural areas and to export electricity to India (who provided money, labour and expertise to help develop HEP). By 2013 95% households had electricity.
Other micro-energy schemes	The other 5% households live in remote rural areas. Government invested in small renewable energy schemes to provide electricity to these areas (many solar panels and 2 small wind turbines). Again, money was provided by the Asian Development Bank.
Fuelwood	The majority of the population (both rural and urban) use fuelwood as the main domestic source of energy for heating and cooking, because it is freely available in the forests. BUT! Takes time to collect and heat, creates smoke and releases CO_2, causes deforestation (and no trees are replaced). Enforcing restrictions is very difficult because of the remoteness.

Energy Conservation Policy:

In 2013 the government and United Nations Development Programme started the US$4 million Sustainable Rural Biomass Energy **(SRBE) project.** This promotes the use of **biomass energy** for cooking, heating and lighting in rural areas. This involves showing people how to make brick-built stoves which use less wood and burn more efficiently. This should benefit 14% of rural population. Another scheme is to **replenish 100 hectares of forest** which has been cut down.

New sustainable energy policies

Alternative Renewable Energy Policy:

In 2013 the government issued this policy to help promote the use of wind, solar, biomass and micro-hydropower systems. This will stop the country being so reliant on HEP, as they don't have large storage reservoirs, but instead depend on rainfall and river flow. Problems are created if there is a dry winter. Also, glaciers in the Himalayas are retreating.

Electric cars:

Nissan is to supply the government and a fleet of taxis with an electric car called the **"Nissan Leaf".** Nissan will also provide charging stations across Thimphu (the capital of Bhutan). If people buy electric cars it will reduce the need to import oil. They can make good use of the country's own plentiful supply of electricity instead.

Evaluate different approaches used by **either** a named developing **or** emerging country to manage and use energy resources in a sustainable way. (8)

How to answer 8 mark questions

8 mark extended writing questions will test you on your ability to construct a well balanced and coherent argument. They will usually start with the command word 'examine' 'assess' or 'evaluate'. They will always require you to discuss your located examples and case studies—even if not explicitly asked to do so. They appear across all 3 papers. Quite often they will be accompanied by a resource which could be a photograph, graph, cartoon, diagram etc. You are expected to use this in your response. See below for a worked example of how to answer an 8 mark question.

(iv) Study Figure 4.

Examine how physical processes work together in the formation of the oxbow lake shown in Figure 4.

(8)

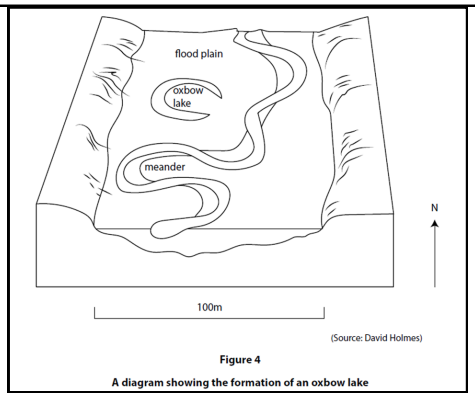


Figure 4

A diagram showing the formation of an oxbow lake

Oxbow lakes are predominantly the result of both erosion and deposition processes (AO3)operating together to create this landscape feature, as shown in 20m in from the NW of the floodplain on Figure 4 (AO4). The diagram shows evidence of different river energies (linked to discharge) (AO4) – point bars on the inside of the meander (lower energy sites of deposition) and erosion where undercutting is present (outside of meander) (AO3). There is evidence these erosion-deposition processes as the foreground shows a cross-section with a deepening and undercutting (AO4). Migration of meanders results from the interaction of the physical processes leading to position change over time as seen on the floodplain in the diagram (AO3/AO4). Eventually, given the right conditions, an oxbow lake can form if the meander is cut-off (NW on diagram) (AO3/AO4). River management such as channelization can influence these processes, as might climate change, i.e. changes in precipitation and river base level resulting from sea-level rise (AO3).

Always **BUG** the question: **B**ox **U**nderline and **G**lance back. Box the command word, underline the important aspects, return to the question.

Notice on the resource, there is a scale shown and a direction arrow. You need to use these in your responses. Equally, when referring to parts of the image, use the terminology "foreground" and "background" to show the examiner where you are referring to. Use key subject terminology, concepts and the language of assessment when possible.

The grid below shows what you need to do to gain the highest levels on the mark scheme. Read this and highlight the key points.

Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Language of assessment:

It would be fair to argue...
The most significant factor is…
A minor factor is…
A fundamental reason for…
To a lesser extent…
Despite this...

Language of assessment:

Nevertheless…
Most importantly…
The most significant…
However…
On the other hand…
It could be argued…

How to answer 8 mark questions

Examine	Break something down into individual components/processes and say how each one individually contributes to the question's theme/topic and how the components/processes work together and interrelate.
Assess	Use evidence to determine the relative significance of something. Give consideration to all factors and identify which are the most important.
Discuss	Explore the strengths and weaknesses of different sides of an issue/question. Investigate the issue by reasoning or argument.
Evaluate	Measure the value or success of something and ultimately provide a substantiated judgement/conclusion. Review information and then bring it together to form a conclusion, drawing on evidence such as strengths, weaknesses, alternatives and relevant data.

Examine	**Assess**	**Discuss**	**Evaluate**
An opening paragraph that identifies the components that have led to the key theme in the question (usually a real thing). Say how each component has contributed to the theme of the question. Explain how the components are interlinked.	An opening sentence that identifies the structure of your answer e.g. '*I am going to determine the significance of a range of factors including……..*' Try to explore a range of factors and then say which are the most important and why. Use facts/figures throughout as evidence of what you are saying.	An opening sentence that identifies the key ideas of your answer. Break the question theme down into different sides of an argument and explain the advantages and disadvantages of them (like a debate).	An opening sentence that makes a decision based on the question (don't sit on the fence). Say which is the best aspect and then give the advantages and disadvantages of it, as well as evidence to back up what you are saying. Do this for another two aspects. Write a conclusion that summarises your answer, making sure you have used evidence throughout.

On the other hand……

This plays a key role because……

This shows that …… is important.

Similarly……

This is fundamental because……

This factor plays a secondary role……

The main argument……

This is predominantly caused by……

This is pivotal in……

Only a minor role is played by……