



Now Test Yourself: Answers

Theme 1

Page 9

- 1 The features of an area that have a special attractiveness or quality.
- 2 Upland, lowland, coastal, forested, river valley, urban, rural and so on.
- 3 Land use, culture, vegetation and geology.
- 4 Glaciation has had a large impact on the British landscape due to large areas of the country being covered in ice in the last ice age. Some of the areas not covered in ice may have been influenced by glacial melt water. Being an island also means that sea level change and coastal erosion have impacts on large areas of Britain. The long history of settlements in the UK also means that many places have a very distinctive nature and are built from local stone, for example villages in the Cotswolds.

Page 10

1 Positive:

- Increase in rural income from the high number of tourists visiting the area.
- Investment in tourism industry creates jobs and helps to diversify a farming economy.
- Increase in rural income from high number of tourists visiting the area.
- Improvement or expansion in local amenities which local people can also benefit from.
- Improvement in the quality of the environment.

Negative:

- Increased visitor numbers cause congestion on narrow roads.
- House prices increase due to rise in second home ownership.
- Disused slate quarries can be a visual scar on the landscape.
- Footpath erosion, litter and car parking resulting from the large number of visitors are a cost to the local area.
- At honeypot sites, shops providing essential goods are replaced by souvenir stores.
- Welsh-speaking community becomes 'diluted' due to incoming non-Welsh speakers.

- 2 A honeypot site is an area within a National Park where tourists are actively encouraged to visit. This means fewer tourists visit other parts of the National Park and therefore these areas can be conserved more easily.

Page 11

- 1 Footpath erosion, littering, air pollution from transport, erosion of grass verges and hedgerows.
- 2 Footpath erosion: repair using a robust material such as stone.
Littering: provide frequently placed litter bins which are regularly emptied.
Air pollution: restrict car parks and increase the frequency of public transport.
Erosion of grass verges and hedgerows: large stones on grass verges prevent cars being parked on them.
- 3 Increased public awareness of the attractiveness and uniqueness of the landscape.
Greater effort is taken to maintain the environment and keep it clean and attractive.
Increased facilities such as car parks which prevent destruction elsewhere.



4 Answers will be specific to the landscape that has been studied. An example is shown below:

Landscape: The Gower

Strategy	Advantages	Disadvantages
Designated footpaths to provide access for visitors but also protect sensitive areas	Prevent erosion of the landscape	Time-consuming and expensive to repair
Detailed information boards at popular visitor sites inform visitors of the unique features of the location, for example the Oxwich Bay Nature Reserve	Visitors are more informed about the landscape and their activities are more focused in the directed areas	Greater destruction of the areas highlighted on the display boards
Clearly marked car parks to reduce parking on grass verges which can damage hedgerows and cause congestion on narrow roads	Reduces erosion of grass verges and congestion on narrow roads	If the car parks become full then cars overflow into the narrow lanes anyway
Strict control over planning and building within the area to ensure that new developments are restricted and that extensions or changes to land use do not spoil the area	Maintains the cultural aspects and character of the environment	Limits expansion of homes and industry and therefore limits economic development in the area

Page 12

- 1 Abrasion: the bedload carried by the river hits into the river bed and banks and erodes part of it away.
Hydraulic action: the sheer force of water hitting the river bed and banks compresses air in gaps in the soil which causes material to be washed away.
Solution: the slightly acidic river water dissolves rocks made from calcium carbonate, for example chalk and limestone.
- 2 Transportation is affected by the river's velocity and also the size of the material being transported by the river. For example, smaller particles such as grains of sand are more likely to move by suspension as they are able to float in the water. However, if the velocity of the river increases then small stones may also move by suspension as the river has more power to move them at a faster speed.

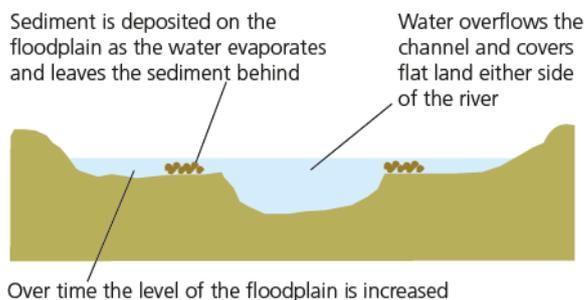
Page 14

- 1 The river erodes vertically downwards and deepens the channel, leaving steep valley sides. Valley sides are weathered which breaks down soil and rock, changing the shape of the valley sides from vertical to sloping.
The weathered material falls down the slope into the river channel.
- 2 As water falls over the step of a waterfall, hydraulic action erodes the plunge pool and the soft rock under the hard rock.
- 3 Abrasion occurs by the eroded hard rock which has fallen from the overhang being moved by the river and this deepens the plunge pool.



Page 15

1



- 2 Meanders migrate due to the lack of valley sides, and widening of the valley floor allow lateral erosion to take place. As erosion occurs on the outside bank and deposition on the inside bank, the river channel 'moves' across the valley floor.

Page 16

- 1 The following coastal processes attack the bottom of the cliff and cause it to erode:
 Hydraulic action: the force of waves crashing into cliffs. Air trapped in the cracks is compressed, which breaks up the rock.
 Abrasion: waves hurl sand and pebbles against the cliff, which wears the land away.
 Solution: salt water dissolves rocks made of calcium carbonate.
- 2 A rockfall is when individual rocks, which have been loosened by weathering, fall suddenly to the beach below, whereas a landslide is when a whole section of the cliff, which has been loosened by erosion, suddenly gives way and falls to the beach below.
- 3 The types of weathering that act on the top of a cliff may include:
- freeze-thaw
 - biological – plant roots and burrowing animals
 - salt crystal growth.
- 4 Landslides tend to occur where a cliff has porous rocks at the top (such as sandstone) and a non-porous rock at the bottom (such as clay). With heavy rainfall they become saturated in the upper parts and this extra weight can cause the landslide. Whereas a rockfall happens when rocks on cliffs have been previously loosened by weathering or where the rocks are well jointed. When erosion occurs at the base of the cliff, these rocks will fall to the base of the cliff.

Page 20

- 1 A spit is a deposition of sand and sediment along a coastline which extends the coastline across part of a river. An offshore bar is a deposition of sand and sediment slightly offshore and is not attached to the land.
- 2 The material that is used to create spits and offshore bars has been eroded previously elsewhere along the coastline and has been moved by the process of longshore drift. It may also have been brought onshore by ocean currents within a sediment cell.
- 3 Rock pools develop due to small hollows in the rock becoming enlarged by the movement of small rocks within them being moved by the sea, causing abrasion to occur and so enlarging the hollow.



- 4 Spits can become eroded over time due to a change in direction of ocean currents which no longer supply the spit with eroded material or will begin to erode the spit itself. Also, storm events can bring destructive waves which can erode large amounts of material very quickly.

Page 21

- 1 Rock type: rocks erode at different rates due to their hardness and therefore the speed at which rocks erode will influence the landforms that are left behind.
Rock structure: the order in which rocks are laid down will influence the landforms created. If soft rock is interspersed with hard rocks then this may create a waterfall in a river channel or a headland and bay formation at the coast.
- 2 Rock type: rivers that flow across a limestone bedrock will be more likely to have sections where they flow underground due to the bedding planes in the rock which are easily eroded.
Rock structure: where hard rock overlays soft rock it is likely that a waterfall will form due to differential erosion.
- 3 Rock structure: a discordant coastline is likely to have a headland and bay type characteristic due to differential erosion of hard and soft rock.
- 4 This is your personal opinion, but ensure that you give reasons to back up your answer.

Page 22

- 1 The discharge of a river is very much dependent on the level of rainfall that the drainage basin has experienced. In the UK, the quantity of rainfall is more in the winter and less during the summer months. Therefore, the drainage basin is more likely to be saturated during the winter months, which leads to more overland flow and a higher discharge compared to summer months.
- 2 Extreme weather events can bring destructive waves which are capable of eroding whole sections of a cliff face or a large section of a spit during one storm event.

Page 25

Round river basin.
Woodland has been removed.
Large sections of the drainage basin have been urbanised.
Impermeable rock.
Saturated soil.

Page 26

- 1 The pattern of average river discharge that is experienced in a river basin over 12 months.
- 2 Prolonged periods of rainfall can lead to saturated ground, which is more likely to lead to a higher discharge.
Short periods of heavy intense rainfall are likely to lead to flash flooding.
Higher temperatures are likely to lead to greater evaporation rates, which will reduce discharge.
- 3 Deforestation.
Urbanisation.
Poor farming techniques – ploughing up and down a slope.
Lack of dredging in a river channel.



- 4 Base flow: the usual level of discharge in a river.
 Rising limb: the increase in discharge in reaction to a rainfall event.
 Peak discharge: the highest level of discharge in a river after a rainfall event.
 Falling limb: the river returning back to its normal discharge level.
 The factors that affect the hydrograph are drainage basin size and shape, vegetation type, land use, geology and antecedent conditions.

Theme 2

Page 29

1

Areas of high population density	Areas of low population density
Greater London Greater Manchester M4 corridor in south Wales West Midlands Clydeside	Scottish highlands Central Wales Lake District National parks

- 2 Greater London: south-east of England, centred around a river, flat land. Economic hub of the UK.
 Greater Manchester: an area of flat land that has historic industrial roots and close to major ports for export.
 M4 corridor in south Wales: south-east Wales, centred around M4 motorway, flat land, numerous rivers running through the area.
 West Midlands: located in the centre of the UK with good communication routes to many parts of the country. Relatively flat for building.
 Clydeside: located in a more accessible part of southern Scotland at the narrowest point of the country and therefore more accessible.
- 3 The high populations are located where they are in the UK due to the following factors:
- large areas of flat land: flat land is much easier to build on than sloping land
 - river locations: the origins of each of the large population areas are usually centred around rivers as a reliable source of freshwater
 - good communication routes: being close to motorways, rail links and airports is important to industry and therefore the population that this brings.

Page 30, first

- 1 The urban area would have more services than the rural one and, therefore, these would want to be accessed by the rural communities. With good access roads it is easy for rural communities to travel into urban areas to access services.
- 2 The sphere of influence will lessen with distance from the urban area as the distance and time taken to get to the urban area is greater and, therefore, it may not be worth the journey. Also, the further they are from one urban area then the closer they may be located to a second urban area, which may have a stronger influence.

3

Retail	Healthcare
Supermarkets Department stores High-order good shops	Hospitals Specialist care centres A&E departments



- 4 Communication hubs: bus and railway stations.
Entertainment centres: theatres and cinemas.
Education: secondary schools, tertiary colleges and universities.
Industry: manufacturing and service industries.

Page 30, second

- 1 A part of the countryside that is located a long distance from an urban area.
- 2 Housing: the type and style of the house people want is more available and affordable in rural areas.
Family status: with increased income or family size, people may look for larger properties in rural locations.
Transport: improved road and rail links, together with the increase in car ownership, enable people to live in a different location and travel to their place of work.
Employment: a decline in industry being located in central urban areas and an increase in industry on the rural–urban fringe improves access from rural locations.
Social factors: factors such as crime rate and schools often lead to people moving out of urban areas.
Environmental factors: increased noise and air pollution in urban centres cause people to seek ‘cleaner’ environments in which to live.
- 3 An increase in house prices due to higher demand.
A decrease in traditional services (village shops) due to residents doing their shopping at larger urban supermarkets. There may be an increase in non-traditional village services such as a crèche.
Few people in the village during the daytime.
Increase in the number of children attending rural schools.
Increased amounts of traffic and associated pollution on rural roads.
Loss of villager ‘identity’ as the majority of residents do not work in the village.
- 4 The answer will very much depend on your example, but answers are likely to include:
 - increase in land area covered by the village
 - increase in the number of buildings in the village including housing and service buildings, for example extensions to schools
 - redevelopment of rundown buildings
 - increase in traffic and air pollution.

Page 32

- 1 Changes in technology such as the internet, fibreoptic broadband and mobile phones.
- 2 Online banking has led to the closure of many rural branches of banks.
Reduction and/or change in employment opportunities in the rural area, for example a reduction in traditional primary jobs and an increase in tertiary jobs.
Closure of village shops: with the increase in online grocery shopping and home delivery services by most supermarkets, village shops are under even more pressure to close.
Bus services are reduced or removed due to the lack of people using them.
- 3 The cycle of deprivation is a positive feedback loop and therefore each step reinforces the cycle even more. For example, a lack of jobs leads to people moving away, which leads to shops closing and therefore further jobs being lost. It is very difficult to stop this process and encourage investment in a rural location that is declining in population.



Page 33

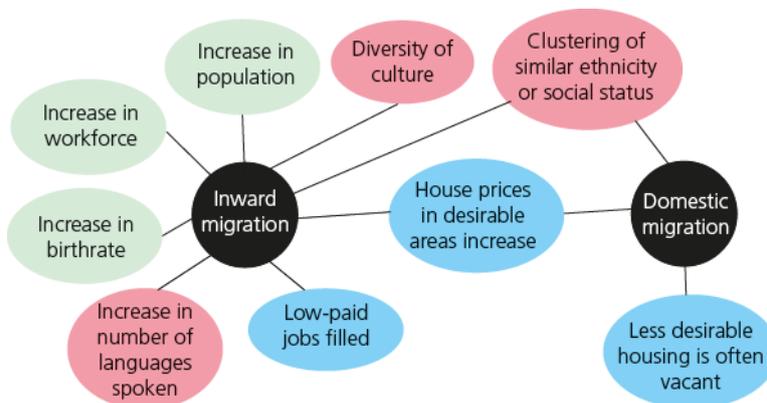
- 1 A community which is able to support the needs of all its residents with minimal environmental impacts.
- 2 Reliability and frequency of transport: ensuring that public transport is available when the rural community needs it.
 Availability of jobs: securing investment from companies to develop jobs based in the rural area.
 Internet connections: ensuring the availability of fast and reliable broadband.
 Education: ensuring that village schools remain open and secondary schools offer a wide range of subjects taught by specialist staff.
 Healthcare: ensuring access to all aspects of healthcare with a provision of transport if needed.
 Village services: encouraging village shops, pubs and post offices to remain open for residents to use.
 Green technologies: promoting the use of renewable energy within the rural area.

Page 35, first

- 1 The overall trend of the graph shows an increase in the UK population by a natural increase between 1992 and 2011. However, between 1992 and 2002, the amount of natural increase declined and from 2002 onwards increased until 2012.
- 2 Migration in the UK began to increase the overall population in 1994 and increased until around 2011 when the number of migrants began to fall. The year with the highest migration was 2005.
- 3 From 1992 to 1998, the largest change in UK population was seen due to natural increase, however after this date international migration played a more important role. This is due to new countries joining the EU and being allowed free movement between the member states.

Page 35, second

1 and 2 Social is red, demographic is green and economic is blue.



Page 37

- 1 The overall trend for house prices in England and Wales was a decrease in price between 2007 and 2013. However, there was an increase in prices for the inner London area. Between 2008 and 2010, all areas saw a drop in house prices.
- 2 The trend in house prices showed the same pattern for inner London, outer London and the whole of England and Wales from 2007 to 2010, although the prices in London were always much higher. However, from 2010 onwards the house prices in London (particularly inner London) began to rise whereas prices in the rest of the UK fluctuated but remained largely the same. The house prices in inner London rose the fastest.



- 3 House prices are linked to the number of people wanting to buy a house in an area and the number of houses in that place that are for sale. If more houses are built, this increases the number of houses available and therefore may decrease the price.

Page 39

Brownfield sites	Greenfield sites
<p>Land is often expensive to clean up from its previous land use</p> <p>New residents may not mix well with existing residents</p> <p>Some existing buildings on the site may be of historic interest and therefore restrictions are in place as to how they can be adapted</p> <p>If archaeological remains are found then this may delay the development</p>	<p>Destruction of rural land</p> <p>Erosion of sections of green belt leading to more urban sprawl</p> <p>New houses may be too expensive for existing residents</p> <p>Decline in rural services as new residents commute to urban areas to work</p> <p>Increase in population will put schools and GP surgeries under pressure</p> <p>Change of culture of rural villages as people from urban areas move in</p>

Page 41

- Expensive city-centre parking costs compared to free parking in out-of-town retail parks.
Increase in the number of home-delivery firms, making delivering goods cheaper.
Wages being paid monthly rather than weekly and therefore people do not visit the CBD as often.
- Convenient and often cheaper method of browsing and buying goods.
Customers can buy products not available locally.
Customers can buy at any time from any location.
It is less time consuming.
Traffic congestion in city centres is reduced.
- Free parking on a Sunday – reduces the expense of shopping in the CBD.
New pavements and street furniture make it a more pleasant environment to shop in.

Page 43

- Global cities are cities that play an important role in the global economic system of finance and trade within a country, whereas mega-cities are cities with over 10 million residents.
- Globalisation is the global web of links between countries involving people, trade, ideas and cultures. This causes urbanisation because industry requires people to work in factories and offices and these are usually found in urban areas. Therefore, with increasing globalisation we see an increase in the size and number of cities.
- A city may lose its global city status if:
 - It does not continue to develop links to other places around the world.
 - A city in an NIC opens up new trade links and therefore becomes an important connection within world trade routes.
 - The global significance of the city becomes less important as the city does not continue to develop.



Page 45

- 1 Mumbai is located on the continent of Asia, in northern India, on a low-lying island in the Arabian Sea.
Cardiff is located on the European continent in south-east Wales. It is situated between the coast to the south and the M4 motorway to the north.

2 Mumbai:

- The Hindu film industry is based there.
- The MNC Tata Steel's headquarters are in Mumbai.
- India's largest port (Nhava Sheva) is located there, which enables import and export of goods.
- Mumbai international airport provides a convenient way for business people to reach the rest of the country.

Cardiff:

- It is the capital of Wales and is where the Welsh Assembly is located.
- Cardiff international airport is located nearby.
- The MNC Admiral Insurance is based there.
- BBC TV programmes and a growing film industry are located there.

3 Mumbai:

- The middle classes of Mumbai are more likely to have formal occupations whereas the slum dwellers are more likely to work in the informal sector.
- The middle classes of Mumbai are more likely to have a longer period of education compared to the slum dwellers.
- The middle classes live in properly planned and built houses whereas the slum dwellers live in informal housing.
- The middle classes have a better electricity supply, sanitation and water supply than the slum dwellers.

Cardiff:

- The rich are more likely to have professional jobs whereas the poor are more likely to have manual jobs.
- The rich live longer than the poor.
- The rich are more likely to go on to higher education than the poor.

4

Similarities	Differences
<p>There is a gap between the rich and the poor in both cities</p> <p>Both cities continue to be a focus for investment within their geographical regions and this leads to further migration to the city</p>	<p>The gap is more extreme in Mumbai as the poor frequently live in informal housing in Mumbai, whereas in Cardiff they live in formal housing</p> <p>The railway system in Mumbai is overused and deaths occur on a daily basis due to overcrowding</p> <p>A large number of people have informal occupations in Mumbai whereas in Cardiff the majority of people have formal occupations</p>

Page 47

- 1 A transport hub is a place where goods or passengers can move between different modes of transport.



- 2 These enable greater flexibility within the transport system, through a concentration of flows. For instance, a point-to-point network may involve sixteen independent connections, each to be serviced by vehicles and infrastructure. By using a hub-and-spoke structure, only eight connections are needed.
- 3 Your answer will depend on which cities you have chosen but you should include:
 - major railway stations
 - ports
 - major roads and connections
 - airports.

Theme 3

Page 49

- 1 Rocks in the asthenosphere are under so much pressure and temperatures are so high that they melt, become semi-plastic and can flow like a liquid. This allows the plates which rest on the asthenosphere to 'float' and move around. Some have described the asthenosphere as the 'lubricating oil' that permits the movement of plates.
- 2 In a constructive margin plates diverge, while in a destructive plate margin plates converge.
- 3 When an oceanic plate collides with a continental plate, the denser oceanic plate sinks beneath the continental plate. This process is known as subduction. A deep ocean trench is formed. In the subduction zone, friction causes the oceanic plate to melt. Some of the molten rock makes its way to the surface through cracks in the rock to form stratovolcanoes. The continental plate is lifted and buckles to form fold mountains.
- 4 Oceanic crust is continuously being created at mid-ocean ridges. As plates diverge magma rises into the mantle and crust. As this magma moves away from the margin it cools, new crust is formed and sediment builds on top of it. At a destructive plate margin the oceanic plate is forced underneath the continental plate. It is destroyed as it melts and material is returned to the mantle. At a destructive plate margin plates push together, the continental crust is crushed and forced upwards. It is compressed and folds, creating fold mountains, but it is not destroyed.

Page 51

- 1 Examples at a destructive plate margin include: ocean trench, fold mountains, stratovolcano. Examples at a constructive plate margin include: ocean ridge, rift valley, shield volcano.
- 2 At a destructive plate margin the oceanic crust is forced down and melts in the subduction zone. Molten rock then rises through cracks in the rock. When the molten rock reaches the surface the lava is viscous (thick), eruptions are explosive and a steep-sided composite volcano or stratovolcano is formed with alternating layers of ash and lava. At a constructive plate margin, as a gap appears between the two plates, runny (not viscous) lava can escape in a line or fissure and a gently sloping-sided shield volcano is formed.
- 3 Where two plates move apart, the space between the diverging plates is filled with magma and new crust is formed. As the plate moves away from the ocean ridge this new crust is taken away with it, hence as you travel away from the plate margin the crust becomes older.



Page 53

1

Similar	Different
Both located at plate margins	A stratovolcano is located at destructive margins while a shield volcano is located at constructive margins
Both erupt material from inside the Earth	Eruptions of a stratovolcano are more explosive than a shield volcano
Both form conical mountains	In a shield volcano the lava is fluid and travels long distances, forming gently sloping cones; in a stratovolcano the lava is viscous and cools quickly, forming steep-sided volcanoes

- 2 Large-scale features: examples include a shield volcano, stratovolcano or caldera. Example: a shield volcano is formed when runny basaltic lava reaches the Earth's surface at a constructive plate margin. Eruptions are gentle oozing of lava. The fluid lava travels long distances and produces a large cone-shaped mountain.
Small-scale features: examples include cinder cone, lava tube, geyser. Example: a cinder cone is formed when hot cinders are released and lava erupts, cools quickly and builds up around a vent, producing a steep, round hill.
- 3 Secondary impacts of a tectonic event include homelessness, lack of food, road closures, collapse of bridges, lack of clean water, unemployment through closure of businesses, and psychological problems from death of family members and the trauma of the event. It can take many years for governments to rebuild the infrastructure, people to be rehomed and businesses to recover. Families may never completely recover from their losses.

Page 54

- 1 Examples include lava flow, lahar, ash cloud, pyroclastic flow. Example: a lahar is a volcanic mudflow consisting of a mixture of ash and water, from rain, melted snow and ice, which travels at great speed down the mountain.
- 2 Merapi is a stratovolcano which erupts explosively. Pyroclastic flows can travel at speeds of up to 200 km/hour so it is difficult to get out of their way. The area around the volcano is densely populated so many people are affected when the volcano erupts.

Page 56

- 1 Shallow earthquakes cause more destruction than deep earthquakes because the shallowness of the source makes the ground shaking at the surface more violent.
- 2 The time of the day influences whether people are in their homes, asleep, at work or travelling. A severe earthquake at rush hour in a densely populated urban area may have devastating effects. The time of year will influence, for example, the climate: heavy rains could affect whether emergency services can easily reach survivors and it will also influence whether people are on holiday or not.
- 3 Primary – 295 deaths, 400 injuries, collapsed buildings
Secondary – 2500 people were made homeless, many historic buildings were destroyed, tourist industry was badly affected.
- 4 In less developed countries, people often suffer more from the effects of earthquakes. In the short term, people may not be well educated about what to do in the event of an earthquake. Building standards may be poor, homes may suffer more serious damage and building collapse may cause



higher death tolls. Emergency and healthcare services are less well resourced and evacuation plans may not be in place. In the long term, clearing up and rebuilding may take longer. Many people could be forced to live in emergency housing or refugee camps for many months or years. Disease is more likely to spread. Poorer countries often rely on aid and help from the more developed countries of the world.

Page 57

- 1 An ocean wave formed by an earthquake.
- 2 There are many arguments to support this viewpoint. People who live in low-income countries do not have much money. Housing is not well built and is likely to collapse more easily in an earthquake. People cannot afford insurance policies to help them recover. Governments are not as strong and lack money so they cannot warn people before an event, evacuate people during the event or help in the rebuilding after the event. Poorer countries do not have well-trained and resourced emergency services to rescue people and treat their injuries.

Page 58

- 1 A map that highlights areas affected by or vulnerable to a particular hazard.
- 2 Examples include:
 - weights on the roof to counterbalance shaking
 - strong steel frames and cross-bracing to provide extra support to the building frame
 - shock absorbers in foundations to absorb seismic waves
 - foundations that go deep into solid rock
 - a roof that covers areas immediately outside the building to protect pedestrians from falling glass
 - several emergency staircases to allow rapid evacuation.
- 3 Examples: Strong steel frame: the building is less likely to collapse and trap people. Emergency staircases: people can evacuate the building quickly and so won't be trapped.

Theme 4**Page 60**

There are many arguments to support this viewpoint. People who live in low-income countries do not have much money. There is a lack of effective coastal flood defences. Housing is not as well built. People cannot afford insurance policies to help them recover. Governments are not as strong and lack money so they cannot warn people before an event, evacuate people during the event or help in the rebuilding after the event. Poorer countries do not have well-trained and resourced emergency services to rescue people and treat their injuries.

Page 61

- 1 Sea levels are likely to increase by between 50 cm and 1.0 m by 2100. Warmer seas mean an increased frequency and strength of storms and storm surges. More violent storms will give heavier rainfall and an increased risk of flooding.
- 2 A rapid rise in sea level caused by storms forcing water into a narrowing sea area such as an estuary.

**Page 63****1** Examples include:

Older residents may not be as mobile as younger residents, they may not have their own transport, it may be more difficult to evacuate these people and they may have serious health needs.

Tourists may not be familiar with the town and may not know the best route out of the town or places to seek shelter. The authorities will not know exact numbers of people staying in the town and so will have to spend time locating everybody.

Poor transport links will hamper the emergency services reaching people needing help and will delay people being able to evacuate the area.

2 A rise in sea level would destroy the sand belt protecting the Nile Delta. Agricultural land would be flooded, fish catches would be affected, the cities of Alexandria and Port Said would be flooded, drinking water would be contaminated, many people would have to leave their homes and the tourist industry would be badly affected. Forty million people live in the Nile Delta region.**Page 64**

Hard engineering is expensive, has a high environmental impact, will not protect against every storm event and the defences will not last forever.

Page 67**1** 'Hold the line' is where existing coastal defences are maintained so that the coastline remains in the same place and locations inland of the defences are protected. 'Managed retreat' allows the sea to flood or erode the coastline as it would without human interference. Places are only protected if it is vital and cost effective to do so.**2** Example: families who live on the coastline would want their properties protected regardless of the cost. They would not want to have to move away from the place where they live and work and where their children go to school. The local council may decide that it is not worth the cost of protecting these properties because of the expense, the defences will not last forever and they could spend the money instead on improving local services such as schools.**3** Example: I would invite people from each of the interest groups to form a working party to discuss different ways in which a stretch of coastline could be managed and perhaps suggest two alternatives. I would then have a public meeting to decide on which option to choose.**Page 68****1** Coastal/river valleys, for example Thames Valley/east coast surrounding the Wash/west of Norwich/area south-east of York/Somerset Levels south-west of Bristol.**2** Unless the economic benefits exceed the overall cost then there is not an economic risk and it is unlikely that money will be spent on coastal defences.**3** Example: caravan owners are in favour since now they do not have to worry about flooding and can use their caravans for an extra two months of the year. Example: some local residents may be against since they question the cost of the scheme, whether it would work and the disruption caused during construction.



4

Cost	Benefit
Cost £28 million Coastline redrawn 2 km further inland	Saves £300,000 a year repairing the shingle bank Protects 348 properties Protects main road into Selsey Protects caravan park at Selsey Created a nature reserve for RSPB Allows cattle to graze on salt marsh

No flooding has occurred since completion of the scheme. The nature reserve is attracting more visitors to the area and the large local caravan park has extended its opening period by two months. It is too early to make any final judgement but the scheme seems so far to have been successful.

Page 70

An SMP aims to reduce the risks to people, property and the historic and natural environment, and to identify sustainable long-term management policies for the coast.

Page 72, first

- 1 Examples:
Some coastlines are sinking into the sea, for example the south of the UK.
Some coastlines are made of rocks which are more easily eroded, for example the Holderness coast.
Some coastlines are at risk of storm surges, for example the Thames estuary.
- 2 Examples:
Sea levels are rising perhaps by up to a metre.
The number of people living along the coastline is continuing to increase.
There is likely to be an increase in the frequency and magnitude of coastal storms.

Page 72, second

- 1 SIDS are low-lying coastal countries first recognised as a distinct group in 1992. They share similar challenges which include small but growing populations, limited resources, remoteness and fragile environments.
- 2 Examples:
Building of sea walls, such as the 3 m wall around Malé.
Evacuation of the smaller islands.
Increasing the height of the islands by importing sand and rocks.
- 3 Example: it is not a practical option since there are many people living in the Maldives, together with their possessions, who need to be moved. It is also unlikely that the Australian government would allow so many people to move into the country at the same time. These people would all need to be housed and work found for them.



Theme 5

Page 75

- 1 Between 312 and 320 ppm.
- 2 Increased by 50 ppm to 370 ppm with annual increases and decreases.
- 3 The annual cyclic variation of CO₂ in the atmosphere corresponds to the seasonal change in uptake of CO₂ by the world's vegetation. Most of this vegetation is in the northern hemisphere since this is where most of the land is located. From a maximum in May, the level decreases during the northern spring and summer as new plant growth takes CO₂ out of the atmosphere through photosynthesis. After reaching a minimum in September, the level rises again in the northern autumn and winter as plants and leaves die off and decay, releasing the gas back into the atmosphere.

Page 76

- 1 The Earth has an elliptical orbit around the Sun. This means that the Earth is sometimes closer to and sometimes further away from the Sun. The eccentricity of the orbit changes over time, completing a cycle every 100,000 years. The tilt of the Earth on its axis towards the Sun also varies between 22.1° and 24.5°, completing a wobble on its axis once every 26,000 years.
- 2 When the Earth's tilt is greater, the sun is more overhead, in higher latitudes, during the summer months. Sunshine is more concentrated and hence it is warmer.
- 3 Carbon is stored in plants. When forest areas are destroyed and burned, the stored carbon is released into the atmosphere as carbon dioxide. Without trees, there will also be less photosynthesis and less carbon dioxide will be taken from the atmosphere.
- 4 Example: carbon rapidly moves from forest to the atmosphere when forest fires release the carbon stored in the timber. It may take many months for leaves to decompose in the soil and release their stored carbon to the atmosphere. It may take many millions of years for carbon stored in the fossil remains of plants to be released through chemical reactions.

Page 77

- 1 Solar energy enters the atmosphere and most of the short-wave energy passes through the atmosphere. This heats the Earth which in turn radiates long-wave energy. This is easily absorbed by naturally occurring greenhouse gases such as carbon dioxide. This then warms the Earth's atmosphere.
- 2 Without the greenhouse effect the Earth would be much colder and not warm enough to support life as we know it.

Page 78

Human activities affecting the carbon cycle include:

- burning fossil fuels including coal and oil which release carbon dioxide
- deforestation: trees absorb carbon dioxide during photosynthesis.

Page 79

- 1 False.
- 2 True.
- 3 False.
- 4 False.
- 5 True.

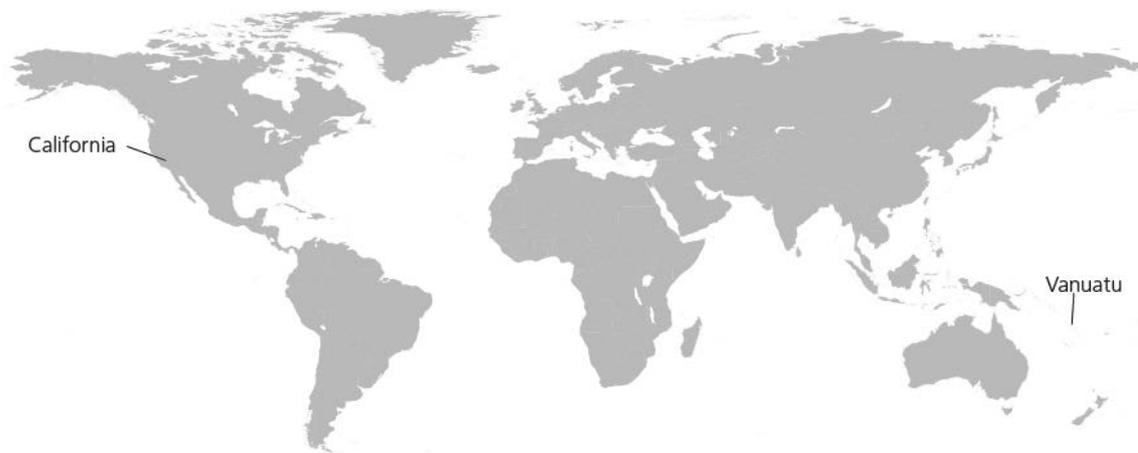


Page 80

- 1 Hurricanes.
- 2 Tropical storms form between approximately 5° and 30° latitude and initially move westward and slightly towards the poles. The northern hemisphere has a greater number of storms. Areas of the world that are affected include South-East Asia, northern Australia, India, the Caribbean and the southern USA.
- 3 Tropical storms form when sea temperatures rise above 27 °C and remain at that temperature for several weeks. Temperatures are warmest in the northern hemisphere between June and November when the Sun is more directly overhead – summer in the northern hemisphere. In the southern hemisphere, temperatures are warmest between November and April – the southern hemisphere’s summer.

Page 83

1



2 Examples:

Vanuatu	California
Eleven people died	17,000 agricultural jobs were lost
90,000 people were made homeless	Hydroelectric power stations stopped producing electricity
Freshwater wells were contaminated by seawater	Salmon died as river levels fell

Page 85

The weather map shows an area of low pressure approaching the UK from the west. The warm front over the west of the UK will give rainfall. This band of rainfall will move to the east of the country through the day. Isobars are very close together, showing that it is going to be a windy day. Temperatures are likely to be mild given the time of the year and winds will be from the west.

Page 86

Example: the deciduous forest ecosystem contains trees such as oak and beech. It occurs in places with high rainfall, warm summers and cool winters. Temperate deciduous forests are found between 40° and 60° north and south of the equator. Trees lose their leaves in winter. Beneath the taller trees is a shrub layer and the forest floor has grasses, bracken and bluebells. Wildlife in the forest includes birds such as owls and animals such as deer, foxes and squirrels.



Page 89

1 Example: acacia tree – baboon – cheetah – lion.

2

Living part of the ecosystem	Rainforest example	Savannah example
Tertiary consumer	Jaguar	Lion
Secondary consumer	Python	Hyena
Primary consumer	Fruit bat	Zebra
Producer	Banana tree	Grasses

Page 90

Examples:

Indigenous people	Global population
Fresh water	Maintains nutrient balance
Wild food	Maintains climate of the region
Materials for arts and crafts	Feeds rivers on which millions of people live
Natural medicines	Locks away carbon dioxide
Wood for building	Provides a tourist resource
Wood for fires	

Page 92

- 1 A climax community exists when the vegetation is in a state of balance with the environment and there is no further influx of new species.
- 2 Many people use sand dunes for leisure purposes such as walking, trail biking and picnicking. Ground-nesting birds such as linnets and skylarks are easily disturbed. Grasses such as marram are easily destroyed. This leaves bare sand and allows 'blow-outs' to develop. This destroys habitat and reduces biodiversity.

Page 93

Example: in the USA huge areas of what was formerly temperate grassland have been removed to grow cereal crops.

Page 95

- 1 The multiplier effect is the snowballing of economic activity so that if one job is created this gives people spending money, which is spent on consumer goods that need to be made and sold, creating further jobs.
- 2 The nutrient cycle relies on the trees. When trees are chopped down, rain removes nutrients from the unprotected soil via surface runoff and leaching. Soil dries up and is easily washed away. Hence, the nutrient cycle is destroyed and will not recover.
- 3 In the savannah, rapid population growth has led to farmers keeping increased numbers of cattle and goats. This reduces the grass cover. Soils therefore have little protection, dry out and are easily eroded; the land becomes increasingly arid. Pressure to provide food for the growing population has led to the removal of trees in slash and burn agriculture. This reduces evapotranspiration and interrupts the water cycle. Leaf litter no longer falls onto the soils and they begin to lose fertility. Soils are eroded because there are no trees to give shade and no roots to bind the soil together. The result is that the soils dry out and the desert spreads.



Page 97

- 1 It is a wall 15 km wide and 8000 km long which will be built across Africa. Eleven countries agreed in 2010 to build it, although only Niger and Senegal have made good progress. It will be a living wall of trees and bushes which as well as protecting the soil will provide wild foods such as fruit and nuts. It will also create habitats for plants and animals.
- 2 See the key terms on each page.

Theme 6

Page 99

Example:

- GNI is an average figure for the whole country but within all countries there are both rich and poor people.
- GNI is a measure of wealth, which on its own may not give an accurate picture of human development. In Bhutan, for example, they measure the happiness of the population, which considers other factors such as health and education.

Page 100

It means that it gives a picture of the difference in development between selected countries at a moment in time. The standard of living of the people in a country, and the performance of a country economically, is constantly changing and thus the development gap is also changing as some countries make progress and others stagnate.

Page 102

- 1 export, primary, tea, Malawi.
- 2 Example: India.
 - Examples: India has invested in education. This has provided a skilled workforce which has attracted MNCs to the country.
 - India has a stable government which means that MNCs can have confidence when investing in the country that they can operate in the country for many years into the future.
 - India has a well-developed infrastructure, making it easy to transport goods around the country and then for export.

Page 105

- 1 Example: the internet allows e-commerce so that people can purchase goods from around the world. It also allows communication via email or video conferencing.
- 2 MNCs can bring both benefits and costs. They provide jobs, improve the skills of the local workforce and bring wealth when they purchase local resources and services. However, profits are often sent overseas, local companies may be driven out of business and they may exploit the local workforce. Nike in Vietnam, for example, has provided 40,000 jobs and increased income from taxes for the government. However, the company has a reputation for employing people in sweatshop conditions and it has large demands for water and energy, which has a negative impact on the environment. Therefore, some would argue that investment by an MNC is not always a good thing.



- 3 Nike is an MNC that has its headquarters in the USA and manufactures its goods in 41 different countries. Production is outsourced to countries such as Indonesia, China, Taiwan, India, Thailand and Vietnam. It provides over 60,000 jobs in those countries. Investment by companies like Nike is helping many poorer countries to develop and increasing the wealth of their populations.

Page 106

- 1 Modern aircraft mean travel to distant places has become easier and more affordable. The internet allows people to find out about distant holiday destinations and to make their own travel arrangements and bookings.
- 2 With 'enclave tourism' tourists pay one price and get all their travel, accommodation, drink and entertainment in one place. Less money is spent in local shops and restaurants, and money is leaked back to the MNCs that own the airline companies and hotel chains.

Page 107

Tourism brings wealth to a country and provides jobs for local people, new services are built that the local population can also use and it improves the language skills of the local population. The government can use the wealth created to improve services such as schools and hospitals. However, this comes at a cost, as some of the wealth created is leaked overseas, jobs are often seasonal and low paid, tourism can have a negative effect on local culture and it can lead to social problems, such as sex tourism in Vietnam.

Page 109

- 1 Commodities are raw materials or primary agricultural products that can be bought and sold, such as tea and cocoa.
- 2 Example: it provides farmers with a minimum wage and safe working conditions.

Page 111

South Asia has a very rapidly increasing population and it is one of the fastest economically developing regions of the world. Both of these factors lead to an increase in water consumption.

Page 112

Water security is when people have enough safe and affordable water to stay healthy, there is sufficient water for agriculture and industry, ecosystems that supply the water are safeguarded and people are protected from water-related hazards such as drought.

A person's water footprint measures the total amount of water used in everyday life for drinking, cooking and washing, together with the water that is used to grow food and to produce goods and services. It includes freshwater consumed and polluted by people.

Consumerism is an ideology that encourages people to buy goods and services in ever increasing amounts.

Page 113

- 1 Example: the supply of water can be managed by building reservoirs which will provide water all year around. Water can be transferred from a region which has a water surplus to a region which has a shortage of water. Water can be conserved, for example by installing water meters in homes.
- 2 Rainwater harvesting is the collection and storage of rainwater. In the home, for example, it could be used to water the garden rather than using tap water.

**Page 115**

- 1 The percentage of water withdrawn for agriculture in Malawi is almost ten times the amount withdrawn in the UK, but Malawi uses much less in industry and in domestic supply.
- 2 Malawi is a low-income country, families generally do not own appliances such as dishwashers and washing machines and hence the domestic use of water is low. Most families are subsistence farmers and tobacco is grown as a cash crop, therefore agriculture uses by far the greatest percentage of water. There is little industry and hence it has a low water usage.
- 3 National governments have a responsibility to the people they govern. They will therefore put national interests above international agreements. Different countries will also have different views on an issue.

Page 117

- 1 The urban core is a built-up area, such as Mumbai in India. It is an area that is a centre for manufacturing industry and services such as banking, film making and shopping. Hence, because there is more wealth in the core and better-paid jobs, the people have a better standard of living.
- 2 Example:
 - investment in education and health
 - increased pool of trained and healthy workers
 - attracts new industry
 - companies supplying components and services to the new industries grow
 - provides employment
 - money spent in local shops and on services
 - increased income to local government from taxes
 - investment in services such as education and health.

Page 118

Example: the south has modern high-tech manufacturing industry, it has a better educated workforce and has the capital city, London, which is an international centre for banking and finance. The north was once an important place for manufacturing but much of this industry has now declined.

Page 121

Deindustrialisation means that workers will lose their jobs and become unemployed. People have less money to spend in local shops and the shops will close. Less money is paid in business rates and so the local authority has less money to spend improving the environment and less money to spend on local services.

Theme 7**Page 123**

- 1 A measure of how well a society is changing for the better or how living standards are improving.
- 2 Gender:
Male and female literacy rates: the more equal the male and female literacy rates are, the more developed a country is.
Fertility rate: the lower the fertility rate, the more developed a country is.
Male and female life expectancy: the more equal and higher the life expectancy, the more developed a country is.



Male and female food consumption: the more equal food consumption is, the more developed a country is.

Employment type: the more equal the types of employment are, the more developed a country is.

Health:

Average life expectancy: the higher the life expectancy, the more developed a country is.

Infant mortality rate: the lower the infant mortality rate, the more developed a country is.

Percentage of GDP spent on healthcare: the higher the percentage of GDP spent on healthcare, the more developed a country is.

Length of hospital waiting lists and the waiting times: the shorter the waiting lists and times are, the more developed a country is.

Mortality rate of specific health conditions such as cancer and heart disease: the lower the mortality rate, the more developed a country is.

- 3 As this development indicator looks at a number of gender-based factors within a country, it is a good measure of how equal men and women are within its society.

Page 126

- 1 Child labour is any work that deprives children of their childhood, their potential and their dignity. Examples include working on coffee or cotton plantations, in clothing factories, or as street vendors and cleaning shoes.
- 2 Poverty: families need the children to work to bring in more money for the family.
Gender inequalities: some cultures do not believe in educating girls and so they are sent to work at an early age.
Lack of access to education and therefore children work at a young age.
AIDS and other diseases have left many children as orphans and therefore they need to work to support themselves.

Page 128

- 1 A refugee is a person who is forced to leave where they live due to causes outside their control, whereas an economic migrant is a person who moves with the hope of gaining work elsewhere.
- 2 Social:
 - persecution within their home countries forces people to move to a safer place
 - families of people who have already settled in European countries migrate to live with them.
 Political:
 - people have fled war-torn countries such as Syria, Afghanistan and Iraq
 - policies of countries such as Germany, which was open to receive refugees in 2015–16, have led to other migrants wishing to migrate as well.
 Economic:
 - poverty and a poor quality of life push people out of Middle Eastern and north African countries and they are attracted by the perceived wealth of European countries.
- 3 Lebanon has been particularly affected by the refugee crisis because it borders Syria, which is currently suffering a prolonged civil war and parts of the country have been taken over by the Islamic State. Therefore, due to its proximity to Syria it receives a lot of refugees.

Page 129

- 1 Welcoming refugees: Germany and Sweden see the refugees as victims and have welcomed them to their countries and help them to integrate into their societies.
Limiting the numbers of refugees: Austria is trying to limit the number of refugees to 80 a day.



2

Response	Advantages	Disadvantages
Welcome	More diverse society Increase in workforce Increase in birth rate	Racial tensions between different groups of people Health and education systems under pressure
Limit refugees	Reduces the potential pressure on health and education systems Avoids the financial burden of housing refugees Avoids racial tensions	International pressure to accept more people Increase in people attempting to enter the country illegally

Page 130

- 1 Increase the use of insecticide-treated bed nets (ITNs) so that people cannot be bitten at night by mosquitoes which carry the disease.
Improve access to fast and effective treatment so that early symptoms can be treated.
Indoor residual spraying (IRS): this involves spraying insecticides in places where mosquitoes are more likely to come into contact with people.
- 2 Malaria is difficult to control for a number of reasons:
 - it occurs in many LICs and people are unable to afford the very effective insecticide-treated bed nets
 - some mosquitoes have developed resistance to some of the insecticides used
 - many people are unable to afford the anti-malarial drugs.

Page 131

- 1 Average life expectancy is usually much lower.
Rates of HIV infection are higher in urban areas than in rural areas.
Many families are in poverty due to adults being too ill to work.
The country's development is limited due to a reduction in taxes paid as a result of fewer people working.
Children of adults with HIV often drop out of school to care for their parents.
- 2 Providing HIV testing and counselling (HTC) services, which increase testing.
Investment in preventing mother-to-child transmission, where pregnant women are given access to medication which helps to prevent the infection being passed to the baby.
Increasing the availability of free condoms.
Treating people with antiretroviral treatment (ART), which helps to prevent HIV leading to AIDS and therefore prevents early death.
- 3 This is a matter of opinion, so whichever you think is more effective make sure that you are able to provide reasons for your view. For example:
Government-based strategies are more effective in dealing with HIV/AIDS because the government will be more aware of the local issues and circumstances that are leading to the spread of AIDS and therefore can focus strategies more effectively.
International-based approaches are more effective because they are able to use the knowledge, distribution channels and economic resources of organisations such as the World Health Organisation.

**Page 133**

- 1 Top-down approaches are large-scale projects that are decided on by national governments.
- 2 These differ from bottom-up approaches as they are government-led, whereas bottom-up approaches are planned and led by local communities to help their local area.
- 3 Measuring progress can be difficult because:
 - Some governments may not want the truth about the living standard of the people in their country to be known.
 - Collecting reliable data is difficult due to poor communications and reliability of information.
 - Cooperation from unstable governments is difficult to achieve.

Theme 8**Page 134**

- 1 Consumerism is the idea that it is good if people buy an increasing amount of goods or services.
- 2 Consumerism leads to an increase in the quantity of goods purchased and therefore the quantity that are produced. Consumerism has an impact on the ecological footprint in the following ways:
 - transport: goods travel all over the world from the primary source to the point of consumption; this travel by air, sea and road adds pollution to the atmosphere and sea
 - the growing of some crops (for example, rice) can lead to increased levels of methane
 - the energy used in the formation of the goods
 - the land area taken to produce the goods
 - the amount of carbon produced from production to consumption
 - the impact on the ecosystem where the goods are produced
 - the waste that is created from producing and consuming the product.

Page 135

- 1 Ecological footprint is a measure of the impact on the natural environment a person's lifestyle has. It is measured as the land area that it takes to sustain this lifestyle.
- 2 The availability of locally produced goods.
Their tastes and preferences for locally produced or branded goods.
Shopping style – supermarket, local shop or internet.
Distance travelled.
- 3 and 4 The factors will be specific to your case study but may include:
 - growing of cash crops
 - logging industry
 - cattle ranching
 - infrastructure for commercial activities
 - mining.

Once you have a list of factors, explain how each one causes destruction of the tropical rainforest. For example, growing of cash crops: land is cleared of rainforest to make room to plant crops, crops grow and remove nutrients from the soil, crops are sold and therefore no nutrients are returned to the soil, tropical rainforest will not regrow due to lack of nutrients.

**Page 136**

- 1 The factors will be specific to the ecosystem that you have studied, but remember to think about the following types of factors:
 - industry
 - farming practices
 - population growth
 - urbanisation.
- 2 Again this will be specific to your case study, but remember to think about how producing and transporting the products people buy impact on the ecosystem.

Page 138

- 1 Long-term impacts:
 - Whole village communities may need to be abandoned due to increased risk of flooding and/or coastal erosion.
 - Increased pressure on the health service to deal with the effects of a heatwave.
 - Through drier summers, 27–59 million people may be living in regions affected by water supply deficits by the 2050s.
 - Spread of new diseases to the UK through new species now being able to survive the warmer UK climate, for example mosquitoes spreading malaria.
 - Drier summers may increase income through tourism.
 - Insurance premiums will rise as more claims are made. Some areas may become uninsurable.
 - New crops such as oranges could be grown in the UK, which will reduce imports.
 - Milder and wetter winter weather.
 - A higher frequency of storms, which may also be more severe.
 - Increased risk of flooding, particularly in the south-east of England.
 - Extremely wet winters are five times more likely over the next 100 years, which may lead to an increased risk of flooding, particularly in the south-east of England.
 - Warmer drier summers are likely, which could bring an increased risk of droughts and heatwaves.
 - Species of animals and plants may migrate north as they no longer 'fit' the habitat that they currently exist in. Some species may become extinct. New species which previously were unable to exist here may spread into the UK.

Short-term impacts:

 - Currently it is estimated that about 330,000 properties are at risk of flooding.
 - The economic cost of flood damage (repairs to buildings and roads, lost days' work, replacing valuables and so on) is predicted to increase.
 - Increases in food price volatility may cause an increase in the cost of food in the UK.

- 2 Underlined in the answer to question 1 above.
- 3 The future effects of climate change on the UK are likely to be:
 - a warmer and wetter climate with more frequent storms
 - higher risk of flooding, due to more intense rainfall causing flash floods, and for many coastal locations, particularly in south-east England, higher sea levels increase the risk of flooding
 - increased rate of coastal erosion due to higher sea levels
 - increased insurance costs due to the risk of hazards increasing
 - migration of species not traditionally seen in the UK which may spread new diseases, for example the mosquito
 - new opportunities for farmers to grow crops that previously would have been difficult to grow in the UK, for example grapes.

**Page 139****1** Long-term impacts:

- Increased water supply scarcity due to contamination from saltwater and irregularity of rainfall.
- Increase in the number of tropical storms destroying what few resources the islanders have.
- Some islanders have already decided to leave and move to New Zealand, becoming environmental refugees.
- The economy is based on the export of copra (dried coconut kernel used to extract coconut oil) and the sale of fishing licences. These are under threat due to flooding and warmer seas.
- The warming of the ocean around Tuvalu decreases the biodiversity on the delicate coral reefs and therefore restricts a food source.

Short-term impacts:

- Increase in water-borne diseases which threaten lives.
- The ground of Tuvalu is prone to increasing salinisation due to sea level rise, which threatens the habitats of some plants, such as coconut trees and pulaka, which is a staple food in Tuvalu.
- The country has sold its domain address '.tv', which has guaranteed an income of \$50 million over twelve years. This money is being used to help pay for flood defences.
- Increased amounts of stagnant water due to frequent flooding.

2 Valid suggestions backed up with reasoning will be marked correct, however some suggestions are:

- The islanders will need to adapt to a life living below sea level, relying completely on robust sea defences to prevent flooding.
- A large proportion of the population may wish to migrate to begin a new life in a less threatened environment.
- The loss of identity of the population as they become settled in other countries.

Page 141**1** Kyoto Protocol or Paris agreement.**2** For example, Kyoto Protocol successes:

- brought countries together to talk about climate change
- first international agreement where countries agreed to reduce emissions.

Kyoto Protocol failures:

- agreement was not legally binding
- did not include LICs or RICs.

3 Local strategies may be more effective than international strategies at tackling climate change as they are more likely to directly affect people's lives. For example, limiting the amount of waste that is collected from people's homes forces people to recycle more, which results in less landfill and therefore lower amounts of greenhouse gases. However, international strategies would not necessarily engage people in the same way and would need to be imposed locally to be successful.**Page 142****1** Wildlife corridors: strips of habitat that allow wild animals to move from one ecosystem to another. For example, the Amboseli–Chyulu corridor in Kenya.

Debt-for-nature swaps: an agreement that poorer nations will spend money on a conservation project and in return a richer country will cancel part of the debt the poor country owes them. For example, the USA and Indonesia with regard to rainforests in Borneo.

Wetland restoration: the process of transforming a wetland area which has been affected by human activity into an area that can sustain a native habitat. For example, Heilongjiang Province in China.



- 2 Wildlife corridor: advantage – allows free movement of animals between protected areas.
Disadvantage – the corridors often come under threat due to pressures to develop regions.
Debt-for-nature-swaps: advantage – provides an incentive for the host country to protect the area.
Disadvantage – relies on international agreements which may be fragile.
Wetland restoration: advantage – provide a valuable water source to communities and protect them from flooding. Disadvantage – removes land from potentially being developed.

Page 144

- 1 Ecotourism involves tourism which has a very low environmental impact, whereas ethical tourism is tourism that considers the needs of the local people and the environment.
- 2 The steps taken will depend on your example but may include:
 - ensuring local people are employed in the tourist industry
 - providing opportunities for local small businesses to sell products to tourists
 - educating tourists about the environment that they are visiting.