

Y10 Summer Support Revision Case Study Booklet

Your Name:

Paper One focuses on physical processes and landscapes.



The exam is broken into the following sections and covers the following case study content:

Section B: The Living World

- **Small Scale Ecosystem** – Woodland area Epping Forest
- **Tropical Rainforest** – Malaysian TRF
- **Hot Desert Environment** – Thar Desert

UK River Landscapes

- **River Tees Landforms:** (Upper Course - High Force Falls, Middle Course - Yarm meander, Lower Course - Tees Estuary)
- **River Flood Management** – River Cherwell, Banbury

Paper Two focuses on human processes, systems and outcomes and how these change over time.

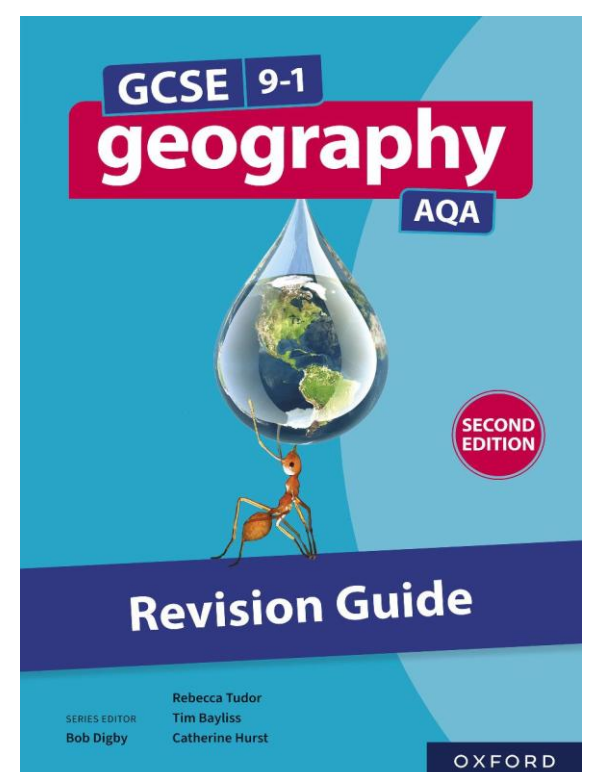
The exam is broken into the following sections and covers the following case study content:

Section A: Urban issues and challenges

- **Major city in an NEE** (Rio De Janeiro, Brazil)
 - Urban planning to improving quality of life (Favela Bairro Project)
- **Major city in the UK** (Manchester)
 - Urban regeneration project (New Islington, Manchester)
- **Urban sustainability** (Freiburg, Germany)

Section B: The changing economic world

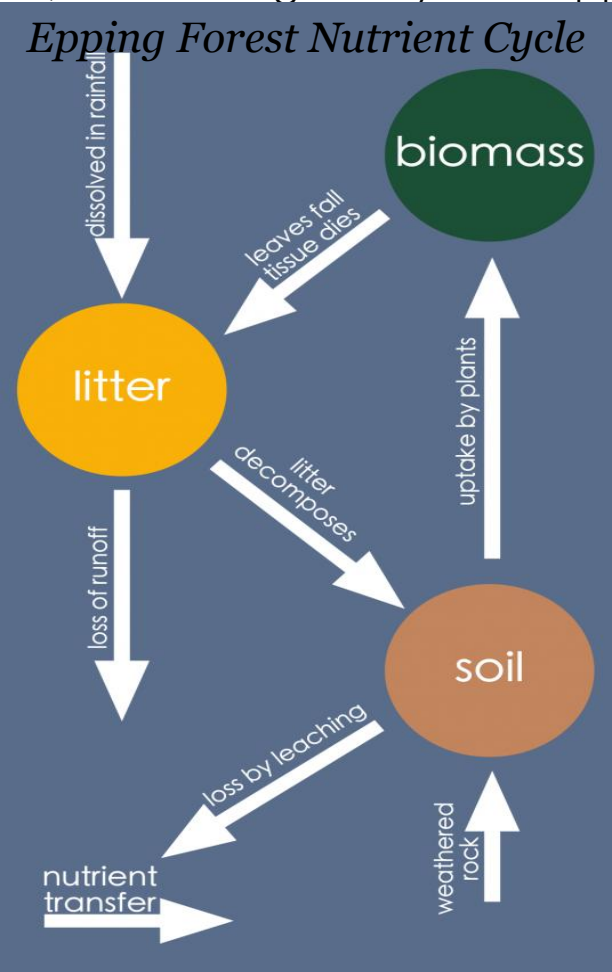
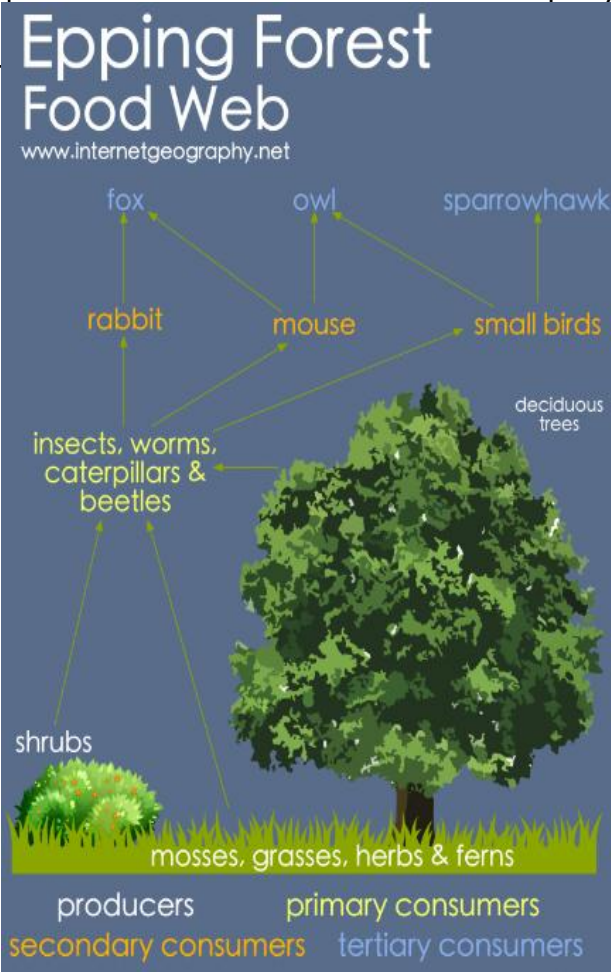
- **Tourism to reduce development gap** (Jamaica)



Section B: The living world: Ecosystems - Epping Forest, UK

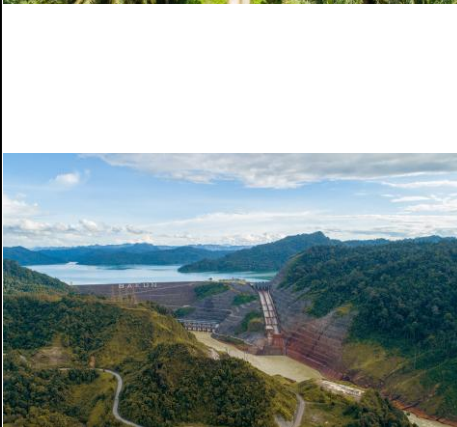
Paper:	Paper One
Section:	Section B: The Living World
Location:	Epping Forest is a large deciduous and ancient forest in the Southeast of England. The forest is found to the north of London and within the M25 ring road.

Specification Content	Notes:
An example of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling.	
Producers, consumers, decomposers	 Producers - (Organisms that make their own food using sunlight through photosynthesis) • A wide variety of native tree species including beech, elm, oak, and ash • 55,000 veteran pollard trees that provide habitats and carry out photosynthesis • 177 species of lichen and moss (including knothole yoke-moss)  Consumers - (Animals that eat plants or other animals) • Nine species of reptile/amphibian • Ten species of bat • 28 species of butterfly including the purple emperor  Decomposers - (Organisms that break down dead organic material and return nutrients back to the soil) • 700 species of fungi, thriving on deadwood • over 100 lakes and ponds provide essential habitats for numerous fauna species (animals) and flora (plants).
Food chain; Food web	• Producers: Mosses, grasses, herbs, ferns, shrubs, and deciduous trees such as oak, beech, and ash. These carry out photosynthesis and form the base of the food web. • Primary Consumers: Insects, worms, caterpillars, beetles, rabbits, mice, and deer. These feed directly on producers. • Secondary Consumers: Owls, sparrowhawks, adders, foxes, and small birds. They feed on primary or other consumers. • Decomposers: Fungi, bacteria, and earthworms. They break down leaf litter and dead organisms, returning nutrients to the soil.
Nutrient cycling	Epping Forest is a temperate deciduous woodland where nutrient cycling is rapid and balanced due to high productivity and seasonal leaf fall. • Around 1500 species of fungi help decompose organic matter. • Leaf litter builds up each autumn, then breaks down, enriching the soil with nutrients. • Nutrients are absorbed by plant roots, transferred into biomass, and returned to the litter layer when plants die or lose leaves. • Rainfall can cause leaching or runoff, but the dense vegetation helps minimise nutrient loss. • This creates a closed-loop system, maintaining fertility and supporting a diverse food



Section B: The living world: Tropical Rainforests - Malaysia (NEE)

Paper:	Paper One
Section:	Section B: The Living World
Location:	Malaysia, is located in Southeast Asia, is split between two regions: Peninsular Malaysia, which borders Thailand, and East Malaysia, situated on the island of Borneo

Specification Content	Notes:	
A case study of a tropical rainforest to illustrate: - causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth - impacts of deforestation – economic development, soil erosion, contribution to climate change.		
Introduction to Malaysia's Rainforest	Malaysia is home to the 24th largest rainforest in the world , covering an area of 192,838km² .	
Rates of Deforestation in Malaysia	Deforestation is the large-scale cutting down of trees, often for profit-making activities like timber exports and agriculture. - Between 2000 and 2013, Malaysia had the highest rate of deforestation in the world, losing 14.4% of its forest cover, an area larger than Denmark. - Deforestation rates fluctuated between 2012 and 2015, but between 2016 and 2020, the rate steadily declined from 185,200 to 73,000 hectares per year. - Overall, between 2001 and 2021, Malaysia lost 17% of its rainforest cover, with the highest losses in Sarawak.	
Causes of Deforestation in Malaysia	Commercial Farming - Malaysia is the second-largest producer of palm oil globally. Palm oil, found in 50% of supermarket products, is a major driver of deforestation. Since the 1970s, large areas of rainforest have been cleared for oil palm plantations.	
	Population Pressure - From 1956 to 1980, Malaysia's government encouraged urban poor to migrate to rural areas. This transmigration policy led to the clearing of around 15,000 hectares of rainforest for new settlements and plantations.	
	Energy Development - Hydropower accounts for about 11% of Malaysia's electricity. The Bakun Dam, completed in 2011, is the largest dam in Asia outside China, flooding over 700 km² of forest to supply energy.	
	Mineral Extraction - Bauxite and tin mining is common in Peninsular Malaysia, with increased exports since a ban was lifted in 2019. Additionally, oil and gas drilling has recently begun in Borneo. This has lead to large areas of the forest being cleared.	
	Logging - During the 1980s, Malaysia was the world's largest exporter of tropical wood. Clear-felling led to significant habitat destruction, but it has since been replaced by selective logging, where only mature trees are cut down.	
	Road Building - Roads have been constructed to access energy projects, settlements, and mining areas. However, rainforest road networks are often unmapped, which may underestimate the extent of deforestation.	
	Subsistence Farming - Local communities use slash-and-burn farming to clear land, a practice that can become unsustainable if fires spread uncontrollably.	

Specification Content	Notes:
A case study of a tropical rainforest to illustrate: • causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth • impacts of deforestation – economic development, soil erosion, contribution to climate change.	
Global Impacts of Deforestation	1. Global Warming - The Malaysian rainforest plays a significant role in regulating global climate by absorbing carbon dioxide (CO₂) from the atmosphere. When trees are cut down, this carbon absorption halts, and CO₂ is released, especially when fires are used to clear land. This contributes to the greenhouse effect and global warming. 2. Loss of Biodiversity - Rainforests are home to a vast array of species, making them the most biodiverse ecosystems in the world. In Malaysia, species richness has decreased by nearly 35% in areas cleared for oil palm plantations, and many species have become endangered, such as: Pygmy Elephants, Orangutans, Sumatran Rhinos, Malaysian Tigers. The loss of these species also reduces the potential discovery of cures for life-threatening diseases.
Local Impacts of Deforestation	1. Local Climate Change - Rainforests help regulate local temperatures through evapotranspiration, a process in which water is evaporated from plants, forming clouds that cool the area and produce rain. With deforestation, less evapotranspiration occurs, leading to: Higher temperatures, Less rainfall, Unpredictable weather patterns 2. Decline of Indigenous Tribes - Deforestation, especially illegal logging, has greatly impacted Malaysia's indigenous people (Orang Asli). The loss of forest has reduced natural resources like food, while pesticides, used to compensate for the loss of forest biodiversity, have further harmed the ecosystem. Some communities even have to hand-pollinate their crops due to the disappearance of bats, which are natural pollinators. 3. Soil Erosion - Tree roots hold soil together, and once these are removed, the soil becomes vulnerable to erosion by wind and rain. This erosion reduces soil fertility, further diminishing agricultural productivity. Additionally, the loss of forest soil releases carbon, contributing to climate change. 4. Conflict - Disputes over land between the state, corporations, and indigenous people have led to conflict. Indigenous groups often lose their ancestral lands, leading to a loss of livelihood and displacement. 5. Pollution - Mining and deforestation activities pollute local water sources, leading to water shortages and reduced access to clean water for local communities.
Economic Impacts of Deforestation	1. Economic Losses from Illegal Logging - Illegal logging deprives Malaysia of approximately USD 500 million annually, while indigenous people lose USD 800 million in compensation and welfare payments. Additionally, the government loses around USD 5 billion annually in direct taxation due to illegal logging practices. 2. Tourism and Biodiversity Loss - The destruction of the rainforest reduces biodiversity, negatively affecting ecotourism, an important industry for Malaysia. Fewer tourists may visit if natural habitats and wildlife continue to disappear. 3. Effects on Agriculture and Trade - Climate change caused by deforestation leads to drier, hotter conditions, which may reduce agricultural yields, affecting Malaysia's trade and economic output.
Economic Gains from Deforestation	1. Job Creation and Industry Growth - Deforestation has created jobs in sectors such as: Logging, Mining, Agriculture, Hydroelectric power. These industries provide local employment and contribute to Malaysia's GDP: 2. Palm Oil Industry - Palm oil is a major economic contributor, accounting for 38% of Malaysia's agricultural output in 2020. The palm oil industry employs 441,000 people, with small landowners comprising half of the workforce. This industry remains crucial to Malaysia's economy, contributing 3% to the national GDP. 3. Public Services - Companies involved in deforestation pay taxes, supporting public services like healthcare and education. Improved access to rainforests through road construction also supports tourism and connects rural communities to urban areas, enhancing economic development.

Section B: The living world: Hot Deserts - Thar Desert, India (NEE)

Paper:	Paper One
Section:	Section B: The Living World
Location:	The Thar Desert is in northwest India. It is one of the major hot deserts of the world with the highest population density. Many people living in this desert are subsistence farmers but with increasing development opportunities, the human population is growing. Due to population pressures this environment is increasingly under threat.

Specification Content	Notes:	
A case study of a hot desert to illustrate: • development opportunities in hot desert environments: mineral extraction, energy, farming, tourism • challenges of developing hot desert environments: extreme temperatures, water supply, inaccessibility.		
Development opportunities in hot desert environments: mineral extraction, energy, farming, tourism.	The Thar Desert is known as the teeming desert as it is the most populated desert area with a population of around 30 million. However, the relative density is still low. Despite having an extreme climate, the Thar Desert can provide development opportunities. These include: • Mining - the desert has valuable reserves of minerals such as feldspar and gypsum. These minerals are used to produce a range of things from cement to fertilisers and are therefore valuable. Limestone and marble are also quarried in the area. • Energy generation - energy is produced in the Thar Desert using solar panels. This energy is used to clean water supplies contaminated with salt (desalination). Wind energy is also used to generate electricity - Jaisalmer Wind Park, India's largest wind farm constructed in 2001. • Farming - irrigation in the Thar Desert has made commercial arable farming viable (the Indira Ghandi canal opened in 1958 after 30 years of construction) and brought water to the Rajasthan region of India from the Himalayas to the north. The canal allowed land to be irrigated and so subsistence and commercial farming grew after the canals completion.. Producing crops such as wheat and cotton has created many jobs and generated income for the local economy. • Tourism - the Thar Desert National Park attracts many visitors who want to see some of the 120-species found there. Tourists explore the desert with local guides on camels. Tourism is an important source of income and creates many jobs for local people. The multiplier effect of tourism creates many development opportunities.	   
	Development in the Thar Desert includes many challenges such as: • Extreme temperatures - temperatures in the Thar Desert can exceed 50°C in the summer months. It is hard for people to work on farm, in mines or as tourist guides during these months as it is simply too hot. • Water supply is a major challenge in the Thar Desert due to low rainfall (120–240 mm/year) and high temperatures, which increase demand. Water is essential for farming, mining, and tourism, so it must be used sustainably. Traditional sources include tobas (natural ponds) and johads (manmade tanks), but these are limited. Seasonal rivers, like the River Luni, only flow after rainfall and are unreliable. • Inaccessibility - the desert covers a huge area of 200,000 km². Most of the desert is inaccessible due to the extreme environmental conditions and poor infrastructure. Limited road network across the desert. Tarmac melts and sand	  

Section C: Physical landscapes in the UK: Rivers - erosional and depositional landforms, River Tees, UK	
Paper:	Paper One
Section:	Section C: River Landscapes of the UK
Location:	The River Tees is located in the north of England. It flows east from the Pennines (Cross Fell) to the North Sea at Middlesbrough.

Specification Content	Notes:
An example of a river valley in the UK to identify its major landforms of erosion and deposition.	
UK river valley location	The River Tees is around 137 km long , rising at Cross Fell (893m) in the Pennines , and flows east through County Durham and North Yorkshire before reaching the North Sea at Middlesbrough . The river passes through steep uplands , a meandering middle course , and a broad, flat estuary near its mouth.
Major landforms of erosion.	High Force Waterfall and Gorge (Upper Course): Located near Forest-in-Teesdale, High Force is the UK’s largest waterfall (21 m). It is formed where hard igneous Whin Sill rock lies over softer sandstone and shale. The softer rock erodes more quickly by hydraulic action and abrasion, creating an undercut and a plunge pool. Over time, the unsupported overhang of hard rock collapses, and the waterfall retreats, forming a gorge downstream.
Major landforms of deposition	Meanders, Levees and Floodplains at Yarm (Middle Course): The River Tees widens and slows, leading to lateral erosion and meandering. At Yarm, large bends are formed as water erodes the outer banks and deposits on the inner banks. During floods, sediment is deposited on the floodplain, creating levees. Over time, these raise the river banks above the level of the floodplain. Tees Estuary (Lower Course): At the mouth of the River Tees, where it flows into the North Sea, the river's velocity slows, leading to the deposition of fine sediments and the formation of extensive mudflats and sandbanks. One of the most notable features is Seal Sands, a tidal mudflat and saltmarsh designated as a nature reserve due to its importance for migratory birds and seals. Despite being close to Teesport (one of the UK’s largest ports) and surrounded by heavy industry, including petrochemical plants and steelworks, the area maintains significant ecological value, meaning it supports a wide range of living organisms and contributes to a healthy ecosystem. Seal Sands demonstrates how conservation efforts can coexist with industrial land use in the estuary.



Upper Course



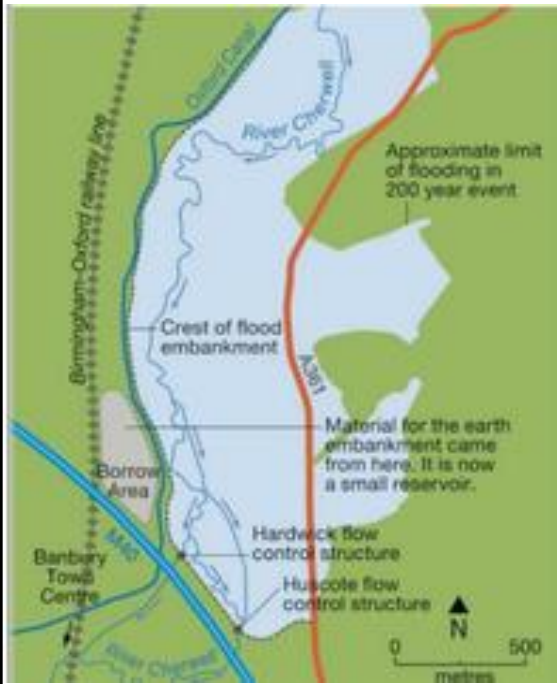
Middle Course



Lower Course

Section C: Physical landscapes in the UK: Rivers - Flood management, River Cherwell, Banbury

Paper:	Paper One
Section:	Section C: River Landscapes of the UK
Location:	Banbury is located in central England , it is a market town in Oxfordshire, approximately 50 km north of Oxford . The town is built on the floodplain of the River Cherwell , a tributary of the River Thames , making it vulnerable to flooding.

Specification Content	Notes:
An example of a flood management scheme in the UK to show: • why the scheme was required • the management strategy • the social, economic and environmental issues.	
Why the scheme was required?	Flood History: Banbury has a history of severe flooding. Major floods occurred in 1998, affecting over 150 homes and businesses, and again in 2007, both causing widespread disruption and damage. Vulnerability: The town is built on a floodplain, making it naturally prone to flooding. Urban expansion and increasing areas of impermeable surfaces (e.g., roads and buildings) have reduced natural infiltration, increasing surface runoff. Key infrastructure at risk includes the M40 motorway, a railway line, and hundreds of homes and businesses. Economic Cost: The 1998 flood alone caused an estimated £12.5 million in damage to property, infrastructure, and the local economy. Need for Protection: To reduce the risk of future flooding and limit economic and social disruption, a comprehensive and long-term flood management scheme was needed to protect the growing population and critical infrastructure.
The management strategy	The Management Strategy (2012) The scheme cost £18.5 million and involved both hard and soft engineering approaches: A map of the Banbury flood management scheme. It shows the River Cherwell flowing through the town. Key features include the M40 motorway, the A361 road, and the Oxford Canal. The map highlights the crest of the flood embankment, the approximate limit of flooding in a 200-year event, and the location of the Hardwick and Huscote flow control structures. It also shows the borrow area where material for the embankment was taken, which is now a small reservoir. A scale bar indicates 0 to 500 metres, and a north arrow is present.  Hard Engineering Features • 2.9 km earth embankment (up to 4.5m high) built north of Banbury to create a flood storage area that protects the M40 motorway and Oxford Canal. • Flood storage area can hold up to 3 million m³ of water, reducing pressure downstream. • Two flow control structures regulate water flow into Banbury during heavy rainfall. • The A361 road was raised and culverts installed to improve drainage and maintain traffic flow even during floods. • A pumping station transfers excess water into the River Cherwell downstream when needed.  Soft Engineering Features • A Biodiversity Action Plan created new habitats such as ponds, trees, and hedgerows, which help absorb floodwater and improve local ecosystems. • The embankment construction used 100,000 tonnes of earth; the excavation site was converted into a permanent reservoir.
The social, economic and environmental issues.	Social: • 441 homes and 73 commercial properties protected from flooding. • Roads and motorways remain open, reducing disruption to people's daily lives. • Quality of life improved with new green spaces and footpaths Economic: • Cost: £18.5 million, funded by the Environment Agency and Cherwell District Council. • Estimated £100 million in flood damage avoided. • Businesses remain open during storms, avoiding loss of income. Environmental: • New habitats created under the Biodiversity Action Plan. • Some land lost to the flood storage reservoir, but designed to be environmentally beneficial. • Natural processes like infiltration and interception are used to help manage water.

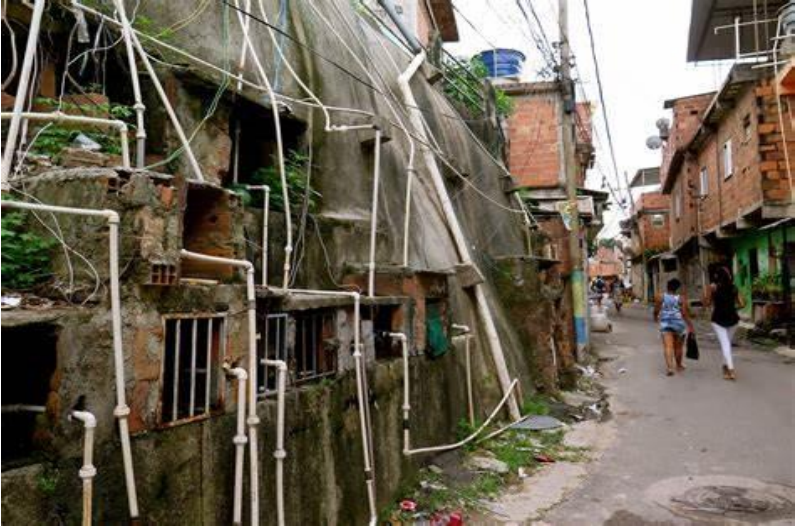
Section A: Urban issues and challenges - NEE city - Rio De Jamarío, Brazil

Paper:	Paper Two
Section:	Section A: Urban issues and challenges
Location:	Rio de Janeiro is located in Southeast Brazil on the Atlantic coast, around Guanabara Bay. It is the second most populous city in Brazil and a major economic and cultural hub in Latin America.

Specification Content	Notes:
The case study examines a major city in a low-income or newly emerging economy (LIC/NEE), highlighting its regional, national, and international significance, the drivers of its growth such as natural increase and migration, the opportunities and challenges created by urbanisation - including access to services, economic development, slum management, and environmental issues and examples of urban planning efforts aimed at improving the quality of life for the urban poor.	
Growth of Rio	• Capital Status: Former capital of Brazil until 1960, remains one of the most important cultural and economic cities in the country. • Historical Growth: Rapid urban growth in the 20th century due to rural-urban migration and natural increase. • Population: Rio has a population of over 12.5 million across the city and metropolitan area making it a megacity. • Urban Expansion: Rapid urban sprawl grew from the city core to surrounding hillsides, with favelas forming as informal settlements). 
Regional Importance of Rio	• Over 12.5million people live in and around the city who also work in the city (job opportunities for the people of Rio). • People will benefit from the city's wealth through the growth of businesses on the outskirts e.g. suppliers. • A key reason for growth of the city is the migration of low skilled workers to the outskirts of the city to access jobs. • Hub for entertainment, sports, and culture.
National Importance of Rio	• Rio was the capital city of the country until 1960. The capital city is now Brasília. • Second most important industrial centre in Brazil after São Paulo. • Port and airport link the city nationally. • Centre for research, higher education, and media. • Headquarters of major Brazilian companies and banks for example, The HQs of Petrobras (Brazil's largest oil company) are located in Rio. • Centre for research and media which attracts highly qualified migrants from universities all over the country. There has been a physical growth of the business centre in the city due to its significance to the economy. • Rio is a major economic centre, producing 5% of the country's GDP (the country's wealth) making it home to Brazil's second largest GDP.
International Importance of Rio	• Port and airport link the city internationally. • Attracts international investment and tourism. • Rio is the most visited city in the Southern Hemisphere. Carnival attracts 1million visitors each year. • Rio is an iconic city due to the Christ the Redeemer statue, which is one of the seven wonders of the modern world. It attracts 1.6million visitors a year. • People from other NEE countries such as China and South Africa, as well as HICs from USA and Europe, locate in Rio to take up highly specialised position in industry. • Global centre for oil and gas industry with offshore drilling and refining. • Hosted the 2014 FIFA World Cup and 2016 Olympic Games. 
Population Growth	Rapid population growth in Rio is driven by: • Rural-urban migration: People move from poorer parts of Brazil, particularly the drought-prone northeast, in search of jobs and better living conditions. • Over 1.2 million people have migrated to Rio in the last decade. • Natural increase: A youthful population results in a high birth rate, contributing to urban growth. • Many migrants are of childbearing age, boosting natural growth. • Rio's urban area has expanded to accommodate the growing population, but housing and infrastructure have struggled to keep pace. • Urbanisation has led to rapid expansion of favelas (e.g., Rocinha, Complexo do Alemão). Push factors from rural areas: • Lack of jobs and low wages - Lack of future prospects. • limited healthcare and education opportunities. • Poor living conditions with limited sanitation • Climate change impacts - floods, droughts and land degradation. • Political instability and poverty. Pull factors to Rio: • Availability of jobs and better paid jobs in construction, services, and tourism (especially before and after the 2014 World Cup and 2016 Olympics). • Improved healthcare, education, and housing prospects. • Urban lifestyle, infrastructure, and access to electricity and clean water. • The appeal of the city's vibrant culture and improved quality of life.
Economic Opportunities	• Finance & Commerce: Rio is Brazil's second most important industrial city after São Paulo - Headquarters of major oil and gas companies (e.g., Petrobras). • Port and Airports: Rio has Brazil's second-largest port and 5 airports including Galeão International Airport, creating low and high skilled work. • Tourism Hub: One of Brazil's most visited cities - Christ the Redeemer (one of the New 7 Wonders of the World), beaches (e.g., Copacabana, Ipanema), Carnival festival, creating many jobs in the hospitality and tourism industry. • Construction Boom: Infrastructure projects like roads, stadiums, metro systems and housing ahead of Olympics and World Cup created many jobs. • Service Sector: Growing job opportunities in education, healthcare, retail, banking, insurance, and retail. • Oil Industry: Rio is a major centre for offshore oil drilling and refining creating jobs.  Main Industrial Zones in Rio: 1. Zona Norte (North Zone) - Location: Around Avenida Brasil and Guanabara Bay. • Home to Rio's main port - Port of Rio de Janeiro, handling large volumes of cargo (imports and exports), including oil, steel, manufacturing goods and food products. • Contains large oil refineries, petrochemical complexes, and steelworks. • Significant industries: shipbuilding, oil refining, food processing, and cement production. 2. Cidade Nova and Centro (Central Business District) • While mainly commercial, some light manufacturing and service industries are based here, especially financial, IT, and creative sectors. 3. Santa Cruz (West Zone) • Location of heavy steel industries, such as the TKCSA steel plant. • Attracts large foreign investment. • Provides significant employment and contributes to Rio's industrial output.

Social Opportunities Access to Services (Health and Education)	Healthcare: • Rio de Janeiro provides free healthcare (SUS) throughout the city and people have better access to hospitals, doctors' surgeries and pharmacies than in other parts of Brazil. • There are three public hospitals and six private ones, however most hospitals are located in the wealthier south and west zones of the city. • Healthcare is also available for poorer people living in favela and health cover here has increased from 4% to 70%. However, health services are limited; many people in the favelas rely on overcrowded clinics (2 health clinics for a population of about 100 000). • 'Family heath teams' of medical professionals or charity-based services such as Doctors Without Borders go into the favela to treat patients and test people for different diseases. This has led to early detection of illnesses and increased life expectancy in the favelas. • The Santa Marta favela with a population of 8,000, is located 13km away from its nearest hospital. • Life expectancy still does vary across the city: • Wealthy areas like Barra da Tijuca: 77 years • Favelas like Cidada de Deus: 45 years Education: • Rio has over 1,000 primary schools, 400 secondary schools and six universities which means 90% of children aged 10 can read and write. • School attendance is improving but drop-out rates remain high especially in poorer areas as children drop out. • The Brazilian government made education compulsory for all children aged 4–14 in 2009 to help reduce inequality and improve access to opportunities for low-income families, however about 25% of the poorest children do not attend school regularly. • About 50% of children continue education after the age of 14 in Rio. • The 'Grants for Families programme' offers financial support to poor families if their children attend school and 'Schools for Tomorrow' are working with communities to improve education provision offering vocational training in the favelas. Free childcare provision is also offered to enable parents (especially mothers) to seek employment. • Sports such as football, volleyball, athletics, are used to encourage children and teenagers from the favelas to stay in school. They provides free sports training, along with educational support, snacks, and school materials. • In 2001 the university of Estácio de Sá opened in the in Rocinha providing further educational opportunities for families in the favela.
Social Opportunities Access to resources (Water and Energy)	Water Supply: • Rio de Janeiro has the largest water treatment works in the world. • People living in the city have a much greater chance of having a fresh water supply than people in rural areas of the country. • Around 80% of Rio's water comes from the Guandu River. • In 2014, around 95% of Rio's population had access to mains water, thanks to government investment. • Before improvements, favelas suffered from irregular water supply and illegal tapping. • The city invested in over 300 km of new water pipes to improve access, especially in poor neighbourhoods. • In some areas like the West Zone, water access has become more reliable due to these efforts. Sanitation: • Urban growth has led to improved sewage networks in some parts of the city. The city has Installation of 12 new sewage works since 2004 and 5km of sewage pipes. • The Alegria sewage treatment plant is one of the biggest, helping reduce pollution in Guanabara Bay. Energy: • Around 99% of the city's residents have direct access to electricity as electricity access has expanded as Rio grows. • New power lines have been installed and the construction of the Simplicio Hydroelectric Complex in 2013 has increased Rio's supply of energy by 30%. • Two nuclear reactors are located in Rio supplying 3% of Brazil's energy needs, and a third was due to start operating in 2023 however work has been suspended. • Over 150 solar panels have also been fitted to the roofs of many building in the Santa Marta favela through a community project, providing affordable energy to the residents. • The city invested in low-cost electricity connections, helping reduce blackouts and improve safety.
Social challenges Access to services (health and education)	Challenges in healthcare: • Healthcare inequality is severe, especially between rich and poor areas. In wealthy neighbourhoods like Barra da Tijuca, life expectancy is 80 years, while in poorer areas like Campo Grande, it falls to just 45 years. • Infant mortality is a major issue in favelas, with 50 deaths per 1000 live births, compared to much lower rates in the wealthier south zone. • In 2013, only 55% of the population had access to a family health clinic, highlighting the limited availability of basic healthcare services in many parts of the city. • Hospitals are often located far from the favelas. For example, residents of Santa Marta have to travel 13km to reach the nearest hospital. • Transport infrastructure is poor in favelas, with limited or no road access, making it extremely difficult for ambulances or residents to reach medical care during emergencies. Challenges in education: • Educational inequality is widespread. In poorer areas, many children drop out after age 14 to support their families through work, contributing to a cycle of poverty. • Although education is compulsory from ages 6 to 14, only around 50% of children stay in school beyond this age. • A lack of schools in favelas means many children must travel long distances, which discourages attendance. • Teaching quality is low due to a shortage of qualified teachers, caused by low salaries and poor working conditions. • Poverty is a key barrier: families often rely on their children to earn money, which means education is not prioritised. • These factors contribute to low literacy rates, limited job prospects, and high unemployment in favela communities.
Challenges of managing resources (water, sanitation and energy)	Water Supply • 12% of Rio's population does not have access to running water. • Water pipes are often leaking, poorly maintained, and subject to illegal tapping, resulting in 37% water loss. • Many favelas lack legal land ownership, so households are not connected to the city's water grid and must collect water from centralised points. • Over 200 tonnes of raw sewage flows into Guanabara Bay daily, and 55 rivers are polluted by run-off from favelas. • Health risks include outbreaks of cholera and other waterborne diseases. Sanitation • Around 50% of sewage is still untreated, particularly in favelas. • 35% of Rio's sewage is dumped in open sewers, often directly into rivers or the sea, contributes to poor water quality in Guanabara Bay • The city's sewage treatment systems cannot cope with the demand caused by rapid population growth. • Open sewers are a health risk, especially in densely populated favelas, leading to the spread of diseases such as typhoid, dysentery, and cholera. Energy Supply • 99% of homes officially have access to electricity, but the system lacks reliability. • There is a lack of legal electricity connection for many favela homes leading to illegal connections to the grid, often causing blackouts due to system overload. Tapping into electricity is also dangerous and unsustainable. • High energy demand from both the growing population and industrial sector is putting pressure on supply systems.

Challenges of Managing the Environment in Rio	Water Pollution • Guanabara Bay is heavily polluted by: • Untreated sewage as over 200 tonnes of raw sewage enters Guanabara Bay daily, reducing water quality. • Industrial waste as over 50 tonnes enters Guanabara Bay daily, reducing water quality. • Oil spills and waste products from ships, reducing water quality. • Pollution threatens marine wildlife Management Strategies: • Ships fined for illegal discharges. • New sewage plants and sewage pipe installation reducing pollution of waterways. • Advantage: Protects beaches like Copacabana and Guanabara Bay. • Disadvantage: Population growth may outpace improvements. Waste Management • Rio produces 3.5 million tonnes of waste per year, but less than 2% is recycled. • Waste collection is limited in favelas due to steep, narrow streets. • Rubbish clogs rivers, contributes to pollution and floating debris in Guanabara Bay. Management Strategies: • waste-to-energy power plant burns 30 tonnes of waste daily, reducing waste on the street and from getting into rivers, but Still releases pollutants into the atmosphere, contributing to air pollution. It also supplying electricity for 1,000 homes. • Seropedica landfill captures methane gas for electricity and fuel, reducing the release of greenhouse gasses into the atmosphere. Traffic Congestion & Air Pollution • Rio is the most congested city in South America and car ownership has increased by 40% in recent years. • Air pollution causes 5,000 deaths per year. • Smog is formed from traffic and industrial emissions. Management Strategies: • Expansion of the Metro System - Rio has expanded its underground metro network to encourage people to use public transport instead of cars. • Fewer cars on the roads means less exhaust pollution and lower congestion. • New Toll Roads - Toll roads have been introduced to reduce inner-city traffic by discouraging unnecessary driving. This helps cut down on emissions in busy urban areas. • One-Way Systems on Coastal Roads - During rush hour, some coastal roads become one-way to improve traffic flow. This reduces congestion, lowering the amount of exhaust fumes produced. • Use of Cleaner Fuels - Seropédica landfill gas is now captured and converted into fuel for waste vehicles, reducing emissions from municipal transport. • Advantage: Less congestion, reduced pollution. • Disadvantage: To avoid toll roads other quieter roads could become busier increasing air pollution in these areas.
Challenge of reducing unemployment and crime.	Challenges in Rio - Unemployment • Unemployment is particularly high in favelas, where many people lack formal education and skills. With so many residents competing for the same low-skilled jobs, securing stable work is very difficult. • A large proportion of favela residents are employed in the informal sector. These jobs are low-paid, unreliable and offer no job security, contracts, or employment rights. Informal work includes street vending, recycling, domestic work, and car washing—jobs which often don't provide enough income to support a family. • Youth unemployment is especially high, and limited job opportunities contribute to poverty and increase the risk of young people turning to crime. Challenges in Rio - Crime • Crime is a serious and widespread issue in favelas, with drug trafficking, gang violence, and armed robbery being common. • The murder rate can reach 20 per 1000 people in some areas. This is largely due to: • Territorial battles between rival gangs. • Frequent armed confrontations with police. • Lack of government presence or control in many favelas. • Many victims are innocent bystanders, including children, who are caught in crossfire during gun battles. • Some children are recruited into gangs, often to act as lookouts or couriers. Many join because: • They need to help support their families • They see no alternative opportunities due to poverty and lack of jobs • In response, the government introduced Pacifying Police Units (UPPs) in 2008 to reclaim control of favelas from gangs and restore law and order by establishing a permanent police presence. However, in some favelas, violence continues and residents mistrust the police, accusing them of corruption and excessive force.



Rio Squatter settlements (Favelas)

Squatter settlements: Areas where people build homes on land they do not own, often illegally, providing basic shelter for many of the world's poorest people.

Construction

- Homes typically made from scrap materials such as wood, plastic sheeting and corrugated metal.
- Over time, residents may use more durable materials to improve housing quality.

Global Context

- Common in many cities of low-income and newly emerging countries.
- Also known as: Informal settlements, Shantytowns, Favelas, Barrios, Slums

Notable Squatter Settlements in Rio

- Over 1,000 favelas (squatter settlements) exist across Rio, including large, well-known ones like Rocinha, Santa Marta and Complexo do Alemão.
- Typically located in undesirable or dangerous areas, such as:
- Steep hillsides prone to landslides (e.g. Rocinha, Santa Marta)
- Land near rubbish tips or polluted rivers
- Areas close to industrial zones or under main roads
- Favelas are often built illegally on land the residents do not own, and they lack access to basic services.
- Many began as small clusters of self-built homes but have expanded rapidly due to urban migration and population growth.

	🏠 Favela Populations in Rio		
	Favela	Estimated Population	Notes
	Rocinha	Approximately 100,000 – 225,000	Official census data suggests 100,000, but unofficial estimates go up to 225,000. It's the largest favela in Brazil.
	Santa Marta	Around 6,000 – 8,000	A much smaller favela in the South Zone, known for its steep slopes and proximity to wealthy areas.
	Complexo do Alemão	Around 70,000 – 120,000	A large complex of 13 interconnected favelas in the North Zone. Seen as a hotspot for gang activity and UPP interventions.

Problems of Living in Squatter Settlements (Favelas) in Rio

High Population Density

- Favelas like Rocinha are densely populated, with estimates of over 225,000 people living in a compact hillside area.
- Like Makoko in Lagos (which has ~250,000 people), Rio's favelas are overcrowded, increasing pressure on housing, services, and sanitation.

Poor Housing Conditions

- Homes are self-built using scrap materials like wood, metal sheets, and bricks, with no formal planning.
- Most lack legal ownership, making them vulnerable to eviction or demolition.
- Many are built on steep hillsides, increasing the risk of landslides after heavy rainfall (e.g., 2010 landslide killed over 200).
- Limited access to clean water, electricity, and proper sewage systems – many residents tap into these illegally.

Sanitation and Health

- Favelas often lack basic sanitation infrastructure – open sewers and overflowing bins are common.
- Health problems like cholera and diarrhoea spread easily due to poor hygiene.
- Infant mortality can reach 50 per 1000 births (compared to much lower rates in richer areas).
- Residents in areas like Santa Marta are located 13km from the nearest hospital, with limited road access for ambulances.

Economic Conditions

- Most residents work in the informal economy: e.g., street vending, car washing, recycling – jobs that are low-paid, unreliable, and offer no legal protections.
- Similar to Makoko (Lagos), some rely on traditional livelihoods, like fishing or local services.
- High unemployment levels – especially for young people – contribute to poverty and crime.

Crime and Safety

- Many favelas are controlled by drug gangs, with frequent gun battles between gangs or with police.
- Murder rates can reach up to 20 per 1000 people in some areas.
- Children are often recruited into gangs to earn money for their families.
- Pacifying Police Units (UPPs) have tried to reduce crime by reasserting control, but results are mixed, with continued violence and mistrust in some areas.

The Future of Favelas

Pride and Resilience

- Despite challenging conditions, many residents take pride in improving their homes using 'self-help' methods.
- In favelas like Rocinha, residents have added electricity, running water, and brick walls without government assistance.
- Community groups have led projects to install basic infrastructure (e.g., clean water, makeshift sanitation) and organise local waste collection.

Community Facilities

- In Rocinha, community centres, informal clinics, and local schools have been developed by residents and NGOs.
- In Santa Marta, improved transport links (e.g., a cable car system) have helped connect the community to formal services and job opportunities.
- Although government services are limited, volunteer-run health programmes and sports projects have been introduced to support youth and public health.

Demolition Threats

- Some favelas are under threat due to urban development and Olympic-related infrastructure projects.
- The 2016 Olympics led to evictions in favelas near the city centre and sports venues (e.g., Vila Autódromo), where hundreds of homes were demolished to make way for roads and facilities.
- Residents are often not offered suitable alternative housing or are relocated far from job opportunities.
- Many protest that favelas are seen as a problem to be removed, rather than supported and upgraded.

Examples of urban planning efforts aimed at improving the quality of life for the urban poor.

How Are Favelas Being Improved in Rio?

Favelas are being improved through urban planning schemes like the Favela Bairro Project, aiming to:

- Upgrade living conditions without relocating residents.
- Provide basic infrastructure (water, sanitation, electricity).
- Improve safety, mobility, and access to services.
- Promote community involvement in planning (bottom-up development).

Common improvements include:

- Wider paved roads for emergency services and rubbish collection.
- Proper sanitation systems (drainage and clean water).
- Health clinics, schools, and leisure centres.
- Hill stabilisation to prevent landslides and replacement of wooden homes with brick buildings.
- Legal land ownership and access to credit.
- Community policing to reduce gang violence.

The Favela Bairro Project

- Ran from 1994–2008, costing US \$1 billion.
- Targeted over 250,000 residents in 73 favelas (mainly in the North Zone, including Complexo do Alemão).
- A bottom-up development approach: residents identified their own priorities.
- The "Slum to Neighbourhood Project" recognised residents' right to stay and gave them a sense of ownership, dignity, and stability.

Key Features:

- Cable car system in Complexo do Alemão – free daily return trips to the city centre.
- New medical, educational, and daycare facilities.
- Adult literacy and job training (e.g., computing, hygiene).
- Legal land titles offered, increasing home security.
- Brick homes replaced unsafe wooden structures.
- Community-led policing units to improve trust and reduce crime.

How Successful Was the Favela Bairro Project?

Successes:

- Improved quality of life – better housing, sanitation, education, and health services.
- Boosted employment and mobility through new infrastructure (e.g., cable car).
- Increased community pride and involvement in local planning.
- Helped formalise previously informal settlements, making them part of the city.

Failures:

- High cost: limited to certain areas, many favelas saw no improvements.
- Rent prices increased in upgraded areas, pushing poorer residents out.
- Some infrastructure (like the cable car) became unmaintained or unused after funding stopped.
- Long-term sustainability depended on continued investment, which fell after Brazil's 2015 recession.

What Has Happened Since?

- In 2017, the cable car in Complexo do Alemão was shut down due to lack of funding, cutting off vital access for residents.
- Recession-hit economy led to the withdrawal of government support, halting further expansion.
- While some favelas remain improved, many still face poor sanitation, unemployment and crime and lack of policing.
- The project proved urban upgrading works, but long-term success requires ongoing funding and support.

Transformations from Slum to Neighbourhood:

Before (Favela)	After (Neighbourhood)
Houses made of wood and scrap	Homes rebuilt with brick and concrete
No ownership or legal status	Land ownership granted to residents
No sanitation or sewage system	Drainage systems and piped water installed
Narrow, steep, unpaved paths	Wider, paved roads and steps added
Few or no public services	Schools, health centres, leisure facilities built
High crime and gang control	Community policing (UPPs) introduced
No formal transport	Cable car system installed (e.g., in Complexo do Alemão)



Section A: Urban issues and challenges – HIC city - Manchester, UK

Paper:	Paper Two
Section:	Section A: Urban issues and challenges
Location:	Manchester is a city located in North West England.

Specification Content	Notes:
The case study focuses on a major UK city, examining its significance both nationally and globally, the effects of national and international migration on its development and character, the opportunities generated by urban change - including cultural diversity, employment, and urban greening—as well as the challenges faced, such as urban deprivation, housing inequalities, environmental issues, and the impact of urban sprawl on surrounding rural areas and commuter settlements.	
About Manchester	- Manchester is one of the UK's largest and fastest growing cities. - Known for its industrial heritage, universities, football clubs, and vibrant culture. - Population of around 550,000 in the city, over 2.5 million in Greater Manchester.
Historical importance	- First industrial city in the world; major textile and cotton producer during the Industrial Revolution. - Birthplace of the modern computer and site where the atom was first split. - Historic global trading links via the Manchester Ship Canal and textile exports.
National importance	- Home to the BBC at MediaCityUK, Granada TV (e.g. Coronation Street) - broadcasting informative and entertaining programmes across the UK. - Economic centre contributing 10% of UK employment. - One of the UK's main financial hubs (Spinningfields – HSBC, Barclays). - Cultural hub with world-famous music scene (e.g. Oasis, The Smiths), football clubs (Manchester United, Manchester City). - Four major universities with 85,000 students (boosting economy and knowledge sector).
International importance	- Manchester University ranked in the top 60 globally; attracts international researchers and students. - Exported £14.9 billion worth of goods worldwide in 2019. - Over 200 languages spoken – one of Europe's most diverse cities. - International media and technology links (e.g. BBC World Service). - Hosts major global events (e.g. concerts, international sports tournaments).
Environmental information	Green Space: - Green space with over 20 parks in the city including Heaton Park (one of the largest in Europe). - Mayfield Park is Manchester's first new city centre park in over 100 years, developed as part of urban regeneration. - Town Hall Extension Green Roof: This features sedum plants and helps reduce urban temperatures, manage rainfall, and encourage biodiversity. - Urban greening initiatives like Castlefield Green Corridor aim to create linked green spaces and promote wildlife. - Focus on reducing carbon emissions and developing sustainable transport (Metrolink, cycling routes). - Investment in green infrastructure to improve air quality and reduce flood risk. Sustainable Transport and Pollution Reduction: - Expanded Metrolink light rail system encourages public transport use and reduces car reliance. - Investment in walking and cycling infrastructure (e.g. Bee Network plan). - Low Emission Zones and electrification of buses are being introduced. Blue Infrastructure Improvements: - Improvements to the River Medlock, River Irwell, and Rochdale Canal include: - Re-naturalisation of riverbanks. - Creation of wetland habitats to reduce flood risk and improve water quality. - Improved access to water spaces for recreation.
Impact of Migration	National migration: students from all over the country come to the three large universities in the city. During term times this increases the population in the south of the city in neighbourhoods such as Fallowfield. This part of the city has lots of bars and cafes which are supported by the student population, as well as a high proportion of rental houses. International migration: Manchester is one of the most ethnically diverse cities in Europe with over 200 languages being spoke in the city. Parts of the city are particularly diverse e.g. Cheetham Hill as well as China Town in the centre and 'The Curry Mile' in south Manchester.
Urban change created social and economic opportunities: cultural mix, recreation and entertainment, employment, integrated transport systems.	Cultural mix: Manchester International Festival every two years brings a wide range of cultural performances across the city (music, theatre, art). Other festivals across the city include St Patrick's Day parade, Manchester Caribbean Carnival and Chinese New Year. Opportunity for social integration and appreciation. Businesses see a boost in custom during festival times. Recreation and entertainment: Football and other sporting events e.g. cycling and rugby, indoor ski slope close to the Trafford Centre, music concerts – Manchester is known all over the world for its indie bands e.g. Oasis, Elbow and Joy Division. Employment: Retail is a major employer in the city (15%) e.g. Manchester Arndale and the Trafford Centre. There is still a large industrial area near Old Trafford and there has been a massive increase in media jobs in recent years when the BBC moved to Salford. Integrated transport systems: the Metrolink tram system is linked to bus stations, national train stations (Piccadilly and Victoria), park and Manchester Airport. One ticket can be used on the Metrolink and buses. However, journeys can be long and expensive.



urban change created environmental opportunities: urban greening.	Urban greening Definition: The process of increasing and protecting green spaces in towns and cities. It includes things like: • Parks and gardens • Street trees and green roofs • Green corridors and walking routes • Improving riverbanks and canals (blue infrastructure) Manchester's Green and Blue Infrastructure Strategy sets out objectives: • To improve the parks and green spaces so that people use them e.g. Music festivals in Heaton Park. • To create green space in new building developments and add green space to current buildings e.g. grass roof on the Town Hall and green areas in New Islington). • Improve access to green areas via green corridors like the Green Loop which seen disused rail lines turned into walkable routes (e.g. Salford's urban trail). • Mayfield Park is Manchester's first new city centre park in over 100 years, redeveloped from a brownfield site.													
urban change created social and economic challenges: urban deprivation, inequalities in housing, education, health and employment	• Deprivation - Parts of the city suffer deprivation 2.7% of the population of Manchester are on benefits, compared to just 1.8% in the UK as a whole, showing that people are poorer and may be unlikely to afford a 'normal' standard of living. Inner city areas, particularly in north Manchester (e.g. Miles Platting) suffer more from deprivation compared to wealthy wards in south Manchester (e.g. Didsbury West). • Inequalities in housing – High proportion of people in poor quality and small housing in MP, high proportions of people in social housing. House prices in DW are very high. • Inequalities in education – MP 45% of GCSE pupils achieved acceptable level of attainment, compared to 83% in DW, probably due to poor attendance at school and poor aspirations due to high unemployment. • Inequalities in health - Life expectancy is lower in MP (71.5 years) compared to DW (79.2 years), because of issues such as obesity and poor health choices e.g. smoking and alcohol consumption. Coronary heart disease is a big problem in MP. • Inequalities in employment – 12% of people in MP are on credit due to unemployment, compared to 2% in DW. High levels of unemployment due to poor outcomes in education.	 												
Urban change created environmental challenges: dereliction, building on brownfield and greenfield sites, waste disposal.	Dereliction Definition: When buildings or land are abandoned and fall into poor condition or disrepair. These areas can: • Attract crime, vandalism, and anti-social behaviour • Be expensive and difficult to redevelop • Be targeted for urban regeneration Dereliction in Manchester: • There are many parts of Manchester that have been left abandoned leading to buildings becoming derelict, attracting vandalism. This is mainly an issue in inner city areas. • Former industrial sites like Ancoats and the Mayfield Train Station were left abandoned after deindustrialisation. • These areas attracted vandalism and crime. Brownfield Sites Definition: Previously developed lands, often abandoned industrial sites that may need decontamination. • Advantages: • Helps reduce urban sprawl by focusing development within the city. • Better access to public transport, lowering car reliance. • Utilizes existing infrastructure and can improve urban environments. • Disadvantages: • High costs for demolition and decontamination. • Increased prices due to high demand for land in urban areas. Brownfield Sites in Manchester: Often contaminated and expensive to develop but prevent urban sprawl. • Manchester City FC's, stadium used to be at Maine Road in Moss Side before they got a new stadium in Ardwick. The stadium was demolished in 2003 and the Maine Road site was left empty for two years until the site was used to build 474 new houses on it. • MediaCity was built on the former Manchester Ship Canal docks. • Recent regeneration projects (e.g. Mayfield Park) show positive change, but many sites remain Greenfield Sites Definition: Undeveloped lands, often agricultural or rural, on the outskirts of urban areas. • Advantages: • No need for demolition or decontamination. • Generally lower land costs. • Disadvantages: • Poor public transport links may lead to increased car use. • Risk of urban sprawl, causing uncontrolled growth. • Loss of valuable agricultural land and natural habitats. • Once developed, these lands rarely return to their natural state. Greenfield sites in Manchester: • Many greenfield sites in Salford are being used to build affordable new homes for the rising population. • Development in Salford's rural-urban fringe is controversial. • Local opposition due to loss of green space and pressure on services like schools to support a rising population. • Peel Holdings, the developer, is being criticised for taking up green space rather than brownfield sites. Waste disposal in Manchester: • Residents in Manchester have a number of different household bins in order to help them to recycle. • Recycling rates have increased by 2.5%, but total waste has increased by 3%, leading to more landfill. • Issues in Manchester are that, although initially people used them, the rates of recycling have stagnated (not improved), despite us generating more waste. Therefore, the city is using more and more landfill to cope with its waste. • There is a greater need for effective waste management strategies.	    Bin Collections In Manchester<table><tr><th>General Waste</th><th>Dry Mixed Recycling</th><th>Cardboard & Paper</th><th>Food & Garden Waste</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>Collected: Fortnightly Bin Size: 140L</td><td>Collected: Fortnightly Bin Size: 240L</td><td>Collected: Fortnightly Bin Size: 240L</td><td>Collected: Fortnightly Bin Size: 240L</td></tr></table>	General Waste	Dry Mixed Recycling	Cardboard & Paper	Food & Garden Waste					Collected: Fortnightly Bin Size: 140L	Collected: Fortnightly Bin Size: 240L	Collected: Fortnightly Bin Size: 240L	Collected: Fortnightly Bin Size: 240L
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Impacts of urban sprawl on the rural-urban fringe, and the growth of commuter settlements.	Urban Sprawl on the rural-urban fringe Definition: The uncontrolled outward growth of a city into the surrounding countryside. It can lead to: • Loss of greenfield land and habitats • More commuting and traffic congestion • Pressure on rural services like schools and healthcare Definition: The rural-urban fringe is the edge of a city, where the urban area meets the countryside. It often contains mixed land uses such as: • Housing estates • Business parks • Retail parks (e.g. Trafford Centre) • Farmland and green spaces Urban Sprawl on the rural-urban fringe in Manchester: • Manchester has grown outward, especially into Salford and southern suburbs • Driven by rising population and shortage of affordable inner-city housing. • Former satellite towns (e.g. Bury, Bolton, Rochdale) are now part of Greater Manchester's conurbation (a large urban area formed when a city expands and merges with nearby towns) • New housing estates are being built on expensive greenfield land. • Stanley Green Retail Park was built on the rural-urban fringe south of Manchester. • The bypass was built to cope with larger numbers of vehicles, however, local people have better services close by rather than having to travel into Manchester. Commuter settlement: Definition: A town or village where people live, but travel (commute) daily into a nearby city for work. These places often: • Have good transport links (motorways, trains) • Attract young professionals and families • Face rising house prices, traffic, and pressure on services In Manchester: • Ramsbottom which is north of Bury is a popular semi-rural area with good motorway links (M66). • Attractive due to scenery and conservation status - semi-rural setting in a conservation zone, so will remain 'unspoilt'. • Property prices are rising, which is pricing out locals. • Increased traffic and pollution; money often spent in the city rather than the local economy.
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Section A: Urban issues and challenges - Urban regeneration - New Islington, Manchester

Paper:	Paper Two
Section:	Section A: Urban issues and challenges
Location:	New Islington is located in the inner city of Manchester, in the north-west of England. It lies just east of Manchester city centre, close to the Northern Quarter and alongside the Ashton Canal. The area is part of the Greater Manchester conurbation, within the district of Ancoats and Beswick. Historically, it was known as the Cardroom Estate, developed during the post-industrial period to rehouse workers from slum clearance. It is now a key focus for urban regeneration, supported by local authorities, private developers like Urban Splash, and community organisations.

Specification Content	Notes:	
An example of an urban regeneration project illustrates the reasons for the area's need for regeneration and highlights the main features of the project.		
Why was it needed?	The area was originally the Cardroom Estate, located in inner-city Manchester (north of the city centre). - Deindustrialisation (the decline of traditional manufacturing industries, such as textiles, coal mining, and shipbuilding) had a major impact on Manchester in the late 20th century. - Factories and mills that once provided employment closed down, especially after the decline of the UK's textile industry. The Cardroom Estate, built to house factory workers, was left socially and economically deprived once those jobs disappeared. With no local employment: - Unemployment rose, and poverty increased. - The estate saw a rise in crime, drug dealing, vandalism, and antisocial behaviour. - By the mid-1990s, 50% of homes were unoccupied or squatted, and the area became known as a "sink estate." - Poor-quality housing built post-Industrial Revolution for factory workers. The estate became a sink estate where taxis and police wouldn't enter after dark. - Poor layout (e.g. cul-de-sacs and blind spots) made the area hard to police, attracting joyriders and gangs. - Shops closed, and basic services were lacking. Locals felt unsafe, and many moved away, worsening the area's decline. There was a need for modern housing and safe public spaces, especially after regeneration began in nearby areas following the 2002 Commonwealth Games.	 
What were the main features of the project?	Main Features of the Project: - Regeneration led by Urban Splash, supported by Manchester City Council (£10 million invested). 1,700 new homes built – mix of private and some refurbished social housing. - Addition of key social infrastructure: - Health centre, New Islington Free School, cafés, restaurants, village hall. - Transport improvements: - New bus route and the New Islington tram stop on the Metrolink line. - Environmental improvements: - Eco-park, orchard, and football pitch. - New cycle lanes and canal-side paths to reduce car use and improve wellbeing. - Restoration of historical buildings like the old Manchester Hospital. - Lighting, pedestrianisation, and public seating to improve safety and aesthetics. - Green space (New Islington Marina) is now a popular, well-used community area.	 
Successes and Failures of regeneration in Manchester	Successes of the New Islington Regeneration Improved Housing 1,700 high-quality homes built (modern apartments, renovated mills). - Some existing social housing was improved. Better Local Facilities - New health centre, primary school, village hall, cafés, restaurants, and shops. - New Islington tram stop improves public transport access. Environmental Improvements - Creation of eco-park, orchard, and green space around New Islington Marina. - Canal paths and cycle lanes promote walking and cycling. - Historical buildings restored and public areas modernised with seating, lighting, and landscaping. Community Use & Safety - Area is now well-used by families and professionals. - Pedestrianised streets and lighting have improved safety and attractiveness. Failures / Criticisms of the Regeneration Lack of Affordable Housing - Many of the new homes in New Islington are expensive, high-end apartments designed for young professionals. - Only a small amount of social housing was kept or built, meaning original residents were often forced out. - This process is called gentrification where wealthier people move into a regenerated area, and local, lower-income residents are priced out due to rising house prices and living costs. Ongoing Social Problems - Despite investment, some areas (e.g. along the canal) still experience antisocial behaviour, vandalism, and drug use. - Some social divides remain between new wealthy residents and those in older housing.	  

Section A: Urban issues and challenges - Sustainable urban living - Freiburg, Germany

Paper:	Paper Two
Section:	Section A: Urban issues and challenges
Location:	Freiburg is located in the south-west of Germany, near the borders with France and Switzerland. It is known as one of Germany's greenest cities and a global leader in sustainable urban development.

Specification Content	Notes:	
Sustainable urban living encompasses features such as water and energy conservation, waste recycling, the creation of green spaces, and the implementation of urban transport strategies to reduce traffic congestion.		
Overview	Freiburg aims to be a Green City, integrating water and energy conservation, waste recycling, green space creation, and sustainable transport to reduce traffic congestion and foster a high-quality urban environment.	
How is Freiburg sustainable?	Water conservation - Promotes rainwater harvesting through green roofs and domestic systems - green roofs filter and collect rainwater for use inside homes. - Permeable pavements allow rainwater to soak into the ground, reducing runoff. - Water is reused for toilets and gardens, helping to protect water supplies. - This reduces pressure on reservoirs and groundwater stores, securing water for future generations. Energy conservation - Freiburg plans to be 100% powered by renewable energy by 2050. - There are over 400 solar panel installations, including at the city's football stadium. - Many homes generate their own electricity with solar panels, and surplus energy is sold back to the grid. - This reduces reliance on fossil fuels and cuts greenhouse gas emissions. Waste recycling - Freiburg uses comprehensive recycling programs and policies to minimize landfill and encourage reuse - Households separate waste into different bins: paper, glass, metals, food, etc. - Freiburg has a recycling rate higher than the German average (Germany: 70%). - Annual waste reduced from 140,000 tonnes (1988) to 50,000 tonnes (2000). - Biowaste is turned into energy at local incinerators. Creation of green spaces 40% of the city is forested, with 56% of that under strict protection. 44,000 trees planted along streets and in parks. - Tram tracks are grass-covered, and many buildings have green roofs. - These green areas improve air quality, encourage biodiversity, and offer recreational space.	  
Implementation of urban transport strategies to reduce traffic congestion	Freiburg defines itself as the "city of short distances": integrated transport and land-use planning encourage walking, cycling, and public transport. An integrated transport system links different types of transport (like buses, trams, trains, bikes, and walking) so that they work together efficiently and smoothly. Key Features: - Easy connections between types of transport (e.g. tram to bus, or train to bike) - One ticket can be used for multiple modes (e.g. bus + tram) - Timetables are coordinated, so you don't have to wait long when changing - Well-designed transport hubs where everything links in one place - Encourages people to leave their cars at home Urban transport strategies in Freiburg: - Freiburg has an integrated transport system, updated every 10 years. - Emphasis on public transport with a reliable and affordable tram network which is frequent, every 7 minutes, low-cost tickets and event tickets are valid for transport. 70% of residents live within 500 m of a tram stop. - Cheap, integrated ticketing means one pass works across all public transport 400 km of cycle paths and 9,000 bike parking spaces, including bike-and-ride at stations. - Bike lanes and park-and-ride systems link with tram stations - Over 79% of trips are made by bike, tram, bus, or foot - Pedestrian-friendly areas and low-speed zones encourage walking and cycling - Car ownership is low: fewer than 500 cars per 1,000 people. - Local government imposed low residential speeds (30 km/h), and restricted parking. In Vauban district, owning a parking space costs £20,000, discouraging car use. Results: +25,000 tram journeys per year -30,000 car journeys per year How Freiburg reduces pollution: - Freiburg reduces pollution by encouraging public transport use and cycling, which lowers car emissions through its low-emission tram network and extensive bike paths. This helps reduce the city's carbon footprint, which is a key goal of sustainable urban living. How Freiburg reduces congestion: - Congestion is reduced because 70% of people live within 500m of a tram stop, and the city uses car-free zones and expensive parking to discourage driving. Freiburg keeps traffic levels low, which is essential for creating a clean, safe, and efficient urban environment. How Freiburg improves quality of life: - Freiburg improves quality of life by creating safe, quiet, and green neighbourhoods, where walking, cycling, and public transport are convenient and affordable. This promotes healthier lifestyles and supports the social and environmental aims of sustainable urban living.	  

Section B: Changing economic world - Tourism - Jamaica

Paper:	Paper Two
Section:	Section B: Changing Economic World
Location:	Jamaica, the fourth-largest island in the Caribbean

Specification Content	Notes:	
An example of how the growth of tourism in an LIC or NEE helps to reduce the development gap.		
Basic information	• Climate: Tropical with high temperatures year-round. • Attractions: Renowned for beautiful beaches and rich cultural heritage; popular cruise ship destination.	
Growth of tourism	• Visitor Arrivals: Significant increase from 1994 to 2016; decline in 2009 due to global recession. • Visitor Expenditure: Rose from US\$128.7 million in 1975 to US\$3.4 billion in 2019.	
Economic growth	• Revenue Source: Tourism is Jamaica's top revenue source, contributing over 50% of foreign exchange earnings (approx. US\$2 billion). • Employment: Directly employs around 200,000 Jamaicans in hotels, transport, and attractions; indirect jobs in trading, manufacturing, and banking.	
Benefits to locals	• Support for Farmers: Initiatives like the Sandals Resort Farmers Program expanded from 10 farmers in 1996 to 80 by 2004, significantly boosting local agricultural sales. • Investment: In 2018, Sandals provided \$25 million in assistance, including \$3.5 million for Irish potato seeds to five farmers. • Local Sourcing: Farmers became sole suppliers of Irish potatoes for all Sandals resorts in Jamaica.	
Improving infrastructure	• Investment: Significant upgrades in port facilities, airports, and road infrastructure to support tourism. • Prioritisation: Initial focus on cruise ship facilities; subsequent development of roads has faced some local discontent.	
Social and environmental impacts	• Quality of Life: Improved living conditions for residents in tourist areas like Montego Bay; however, some pockets of poverty remain. • Environmental Benefits: Initiatives include landscaping projects and the establishment of nature parks, enhancing the natural environment. • This summary outlines the key points related to the growth of tourism in Jamaica and its role in reducing the development gap.	