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Urban Issues and Challenges

Urbanisation

quiz



The Big Picture

*Urbanisation**

LIC/NEE case study

Economic World

Urban change in the UK

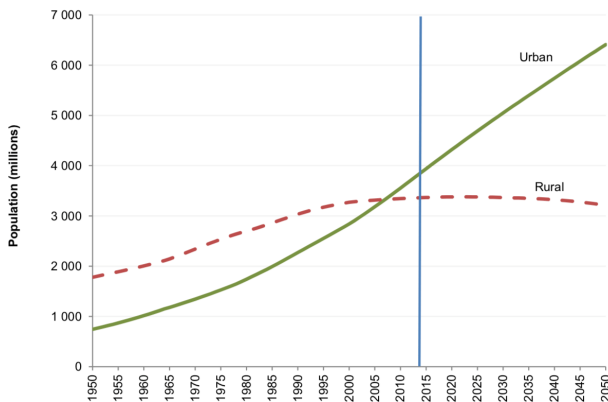
Urban sustainability



Global Urban Change

By 1804, the world's population had grown from half a billion to one billion over 300 years. By 1999, it had surged from 3 billion to 6 billion in merely 39 years. It is anticipated that the global population will stabilise in the twenty-second century.

Urbanisation is the increase in the proportion of people living in towns and cities. The graph below shows a significant increase in urbanisation between 1950 and 2014, from 0.8 billion to 3.85 billion people.



Urban Trends in LICs & HICs

- Urbanisation first occurred in high-income countries (HICs) during the Industrial Revolution. People were attracted to urban areas (pulled) from rural areas to work in factories. They were also pushed as developments in technology led to mechanisation on farms.
- Nowadays, the rate of urbanisation in low-income countries (LICs) is greater than in HICs. As LICs develop, more people migrate to urban areas. The choropleth maps below clearly show how many LICs are becoming more urbanised.



Key Terms



Urbanisation – an increase in the proportion of people living in towns and cities.



Natural Increase – The birth rate minus the death rate of a population.



Rural to urban migration – the movement from rural to urban areas, due to push and pull factors.



Urbanisation Factors

Although urbanisation is greater in wealthier areas of the world compared to poor areas, rates of urban growth (changes between 1950 and 2024) are higher in less developed areas of the world. rates of urbanisation in poorer parts of the world are very high. This is due to **rural-urban migration** and **natural increase**. Current rates are projected to increase due to industrialisation and economic development in some poorer countries. Urban growth rates are lower in more developed countries because they have already taken place, hence the high levels (over 80%).

Push Factors



- Agricultural changes
- Economic pressures
- Resource scarcity
- Disasters and conflicts

Pull Factors



- Employment
- Improved living standards
- Education
- Social factors



Megacities

- A megacity is an urban area with a population of over ten million people.
- In 1975, there were only four megacities – New York, Tokyo, Mexico City and São Paulo. Today, there are estimated to be 35.
- Asia is home to 62.9% of the world's megacities, most of which are located in India and China.
- In 2024, most megacities are located in NEEs.
- By 2050, 14 more urban areas are set to become megacities.
- Many of the world's fastest growing cities are currently in Africa.



Urban Issues and Challenges

The Location and Importance of Rio

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The Location of Rio



Rio de Janeiro (Rio) is Brazil's second most populated city after Sao Paulo with a population of 6.5 million, and a further 12.5 million in the urban area. Rio is located in the southeast of Brazil on the Atlantic coast. Rio was the capital of Brazil under Portuguese colonial rule. It was established as a trading port. Brasilia became the capital city of Brazil in 1960 to encourage economic development further inland. However, Rio remains one of Brazil's most important cities.



Regional Importance

- Rio is important in providing hospitals, schools and universities and provides employment, leisure and recreation opportunities
- A thriving arts and culture scene.
- The city is a major transport hub with an airport and important docks providing raw materials for local and regional industries exporting products.



Key Terms



Transnational Corporation – companies that operate in more than one country.



GDP – the monetary value of final goods and services — produced in a country in a given period of time.



National Importance

- Brazil's oil, mining and telecommunications companies have their headquarters in Rio.
- Several of the country's universities and research and development institutions are based in Rio.
- Rio is a major manufacturing centre specialising in chemicals, processed food, clothing and pharmaceuticals.
- The port is important for the export of coffee, sugar and iron ore.
- It is Brazil's second most important industrial area and produces 5% of the country's gross domestic product (GDP).
- Major entertainment and media organisations are based in Rio.



International Importance

- Rio has hosted a number of global sporting events for example the 2016 Olympic and Paralympic Games, and the 2014 World Cup
- Tourists from around the world are drawn to Rio to see attractions such as the Statue of Christ the Redeemer and participate in colourful festivals.
- The city is an international centre for industry and finance.
- It has five ports and three airports, which make it a major international transport hub.
- It is one of the most visited cities in the southern hemisphere due to natural attractions such as its stunning beaches and Sugarloaf mountain.



Urban Issues and Challenges

The Growth of Rio

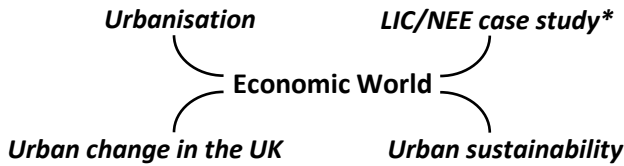


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The Big Picture



Key Terms



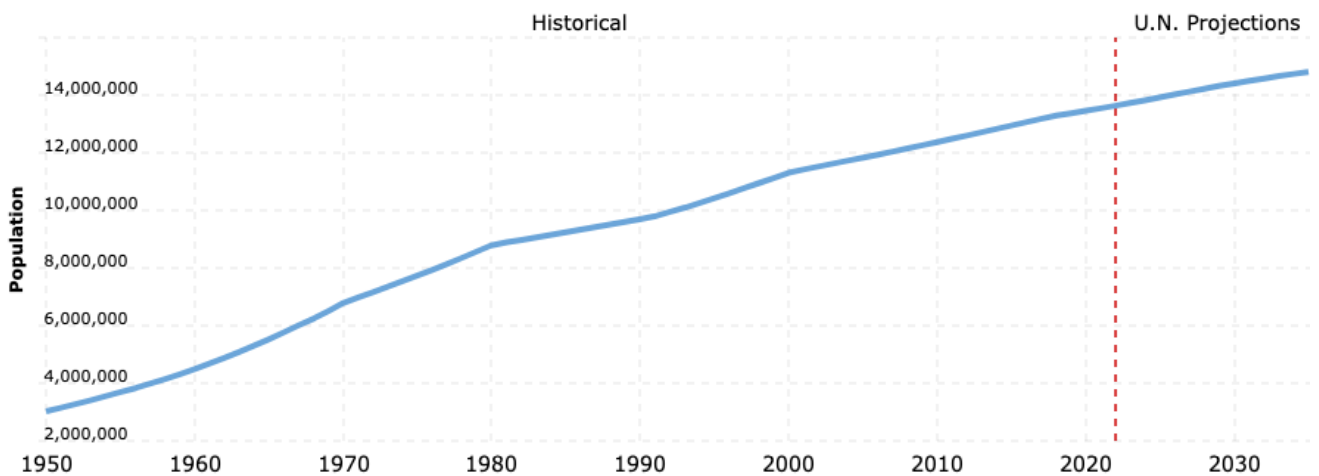
Rural to urban migration – The movement of people from the countryside to the city.



Natural Increase – The difference between live births and deaths in an area.



Population Growth



Rio's population is growing rapidly. Since the 1950s, the population of the city has more than trebled. As a result, Rio de Janeiro has an estimated 2020 population of 6.48 million. The metro population (surrounding area under the same local government) of Rio de Janeiro is much larger, however, with 13.5 million residents in 2021.



Reasons for Growth



Rural to Urban Migration

As Rio has developed, it has attracted migrants from within Brazil and from abroad. One of the largest groups of migrants is the Portuguese people. Rio is the largest Portuguese city outside of Portugal. Rural-to-urban migration has been a significant cause of population growth. Migrants are pulled to the city because of better education, employment opportunities, and improved living conditions. On the other hand, migrants have been pushed from rural areas due to mechanisation (use of machinery) on farms, poor living conditions and the lack of employment

opportunities. More recently, Rio has attracted migrants from South Korea and China who seek business opportunities.



Natural Increase

The high migration rate into Rio has led to a youthful population. As a result, the city has a high rate of natural increase due to the high birth rate and relatively low death rate. The death rate was 5.7 per 1000 people in 2015 and the death rate was 12.75 per 1000 people. This is a natural increase of 7.05 per 1000 people.



Urban Issues and Challenges

Social and Economic Opportunities of Urban Growth in Rio

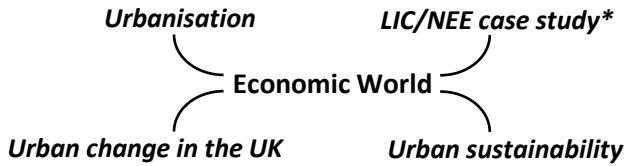


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The Big Picture



Key Terms



Social opportunities – Chances for people to improve their quality of life e.g. access to healthcare and education.



Economic opportunities – providing an equal chance for people to earn a living wage.



Social Opportunities



Health Care – Rio de Janeiro offers better healthcare access than rural areas, with 3.44 doctors per 1,000 people compared to Brazil's average of 2.81. Initiatives like "family health teams" provide vital services, reaching up to 3,000 individuals per team. Healthcare coverage in favelas increased from 4% to 70% since 2008, supported by investments for the World Cup and Olympics. During the COVID-19 pandemic, Rio achieved higher vaccination rates than other regions, reflecting its advanced healthcare infrastructure.



Water supply – Around 96% of Rio residents have access to piped water, compared to only 88% in favelas. The city's water system includes the world's largest treatment facility, seven new plants, and 300 km of pipelines built since 1998. Most of Rio's water comes from the Guandu River, supported by over 1,000 mm of annual rainfall, ensuring a reliable supply with proper infrastructure and management.



Education – Rio's education system surpasses that of rural areas, with over 1,000 primary schools, 400 secondary schools, and six universities. The city has a 97% literacy rate for those aged 15 and older, exceeding the national average of 93.2%. Programmes like "Schools for Tomorrow" and government grants improve education in favelas, where attendance has historically been low. The opening of Estácio de Sá University in Rocinha further enhances higher education opportunities.



Energy – Nearly 99% of Rio's population has electricity access, with the 2013 Simplicio hydroelectric plant increasing supply by 30%. Two nuclear reactors are operational, with a third underway. Initiatives like solar panels in the Santa Marta favela provide clean energy to poorer areas. However, illegal power tapping in favelas remains an issue, leading to risks such as fires.



Economic Development



Manufacturing – Rio is a hub for diverse industries, including engineering, pharmaceuticals, printing, publishing, and food processing. Offshore oil discoveries have driven the growth of oil-related industries such as refining and shipbuilding, which provide stable employment and attract investment. These industries create a multiplier effect, fostering new businesses in the supply chain and boosting economic growth.



Commercial and Industrial Zones – The North and Centro zones are key industrial hubs, benefiting from their proximity to Brazil's third-busiest port. These areas support exporting goods like coffee, sugar, and oil, while thriving industries here provide employment for the local population. The city's high income per capita drives demand for services and retail, boosting the economy further.



Infrastructure – Significant investment in infrastructure has improved roads, transport, and

services. The city's port facilities and transport links enhance its role as a centre for commerce and industry. Planned infrastructure improvements will continue to attract business and create further economic opportunities.



Tourism – With its iconic beaches, cultural heritage, and global events like Carnival, Rio is a top tourist destination. The South Zone, in particular, thrives on tourism, providing jobs in hospitality, retail, and luxury services. Tourism significantly contributes to the city's economy.



Informal Sector – Unemployment in Rio's favelas can exceed 20%, with many residents relying on the informal economy. Jobs include street vending, housekeeping, and handicraft production. While these roles offer essential income, they are low-paid, sporadic, and lack formal contracts, leaving workers without benefits or job security. This sector represents one-third of Rio's workforce but does not generate tax revenue for the government.



Urban Issues and Challenges

Challenges of Urban Growth in Rio

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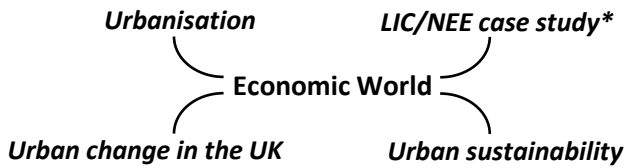
Informal settlements

Social and economic

Environmental



The Big Picture



Managing Urban Growth

Housing Shortages: Rapid population growth has outpaced housing development, forcing millions into informal settlements or *cortiços*.

Favelas: Informal settlements built on steep hillsides and wastelands. These homes often lack basic amenities such as sanitation and clean water. Many are at risk of landslides, such as in 2010 when a slide killed 200 people and destroyed thousands of homes.

Cortiços: Overcrowded tenement buildings in central areas, often illegally subdivided. These lack proper ventilation, lighting, and sanitation - landlords charge high rents for poor conditions.



Water, sanitation and energy

Water Supply: The Guandu Treatment Plant provides 92% of Rio's fresh water. 12% of residents lack access to clean running water. Over 1/3 of water is lost due to leaky pipes, fraud, and illegal connections. Favelas supply issues include water being delivered to central collection points.

Sanitation: 35% of sewage is discharged untreated into Guanabara Bay. 50% of favela residents lack sanitation, and open sewers are common, increasing the risk of diseases like cholera.

Energy: Power cuts are frequent due to overloaded systems. Many favela residents tap into electricity illegally, causing shortages and fires.



Health and Education

Health – Rio has only six hospitals, and health clinics are insufficient for the city's population. In favelas, residents live 13 years



Key Terms



Sanitation – Measures designed to protect public health, including the disposal of sewage and waste.



Informal sector – Employment done without official knowledge of the government without paying taxes.

less on average than in wealthier areas. Diseases like tuberculosis are 10x more common due to poor sanitation. Overcrowding led to the rapid spread of COVID-19 during the pandemic



Education – While 90% of 10-year-olds can read and write, 25% of the poorest children do not regularly attend. Favelas lack schools; for example, Rio das Pedras, with 50,000 people, has only two primary schools and one high school. Many children drop out by age 14 due to economic pressures to support their



Unemployment & Crime



Unemployment – Between 2017 - 2020, unemployment in Rio averaged 15%, with high youth and female unemployment. 3.5 million workers are in the informal economy, lacking job security, benefits, or tax contributions.



Crime – Drug trafficking and violent crime are prevalent in favelas. Murder rates have risen by 20% since 2017, linked to unemployment and reduced police funding. Drug related crime is common.



Environmental Issues



Waste Disposal – Rio produces 3.5 million tonnes of waste annually, with less than 2% recycled. Waste collection is irregular in favelas, leading to uncollected rubbish entering rivers and causing water pollution.



Water Pollution – Over 50 tonnes of industrial waste dumped daily into Guanabara Bay



Air Pollution and Traffic Congestion – Most congested city in South America. Air pollution causes around 5,000 deaths annually.



Urban Issues and Challenges

Urban Planning Improving Life in Rio Favela Barrio Project

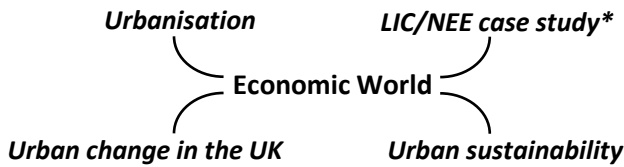


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The Big Picture



Rio's Challenges

- **Favelas:** Informal settlements housing over 1.5 million people, often lacking basic services like clean water, electricity, and sanitation.
- **Overcrowding:** Densely populated slums with poor infrastructure and high crime rates.
- **Employment:** Limited job opportunities and informal work with low pay.
- **Health Risks:** High rates of disease due to poor sanitation and unsafe housing.



Favela Bairro Project

- **What is it?** A site and service scheme where authorities provide land, materials, and infrastructure, allowing residents to improve their own homes.
- Example: Complexo do Alemão:
- Home to 26,000 residents.
- Improvements include:
- Fresh water and sanitation systems.
- Paved roads and street lighting.
- Schools, health centres, and community facilities.
- A cable car system improving access to the city centre.
- Credit schemes for residents to purchase materials for home upgrades.



Features

Social:

- Childcare and after-school programmes.
- Adult education and skills training (e.g., computing and hygiene).
- Access to healthcare services.



Key Terms



Favela: A densely populated informal settlement in Brazil, often self-built homes and a lack of access to services such as sanitation, water, and electricity.



Site and Service Scheme: A project where infrastructure is provided, and residents build their own homes.



Quality of Life (QoL): Measures well-being based on health, education, and living conditions.

Economic

- Legal land ownership for residents.
- Credit access to enable home improvements.
- Increased job opportunities through better transport links.

Environmental

- Replacement of unsafe housing with brick structures.
- Infrastructure upgrades for water, electricity, and sanitation.
- Road widening to improve waste collection and emergency access.



Improvements to QOL

- **Social:** Better healthcare, education, and safer housing.
- **Economic:** Legal ownership and credit schemes improve financial stability.
- **Environmental:** Safer housing and improved sanitation reduce health risks.



Successes and Challenges

Successes:

- Recognised by the UN as a model for sustainable urban planning.
- QOL and job prospects significantly improved.
- Mobility enhanced through the cable car system.

Challenges:

- Limited literacy affected training programmes.
- Credit schemes were not widely accessible.
- Rent increase made homes inaccessible to some.
- Maintenance of costly infrastructure (e.g., elevated pavements causing flooding).



Urban Issues and Challenges

Urban Growth in the UK

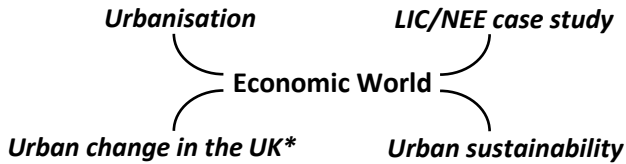


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The Big Picture



Key Terms



Population distribution – the pattern of where people live.

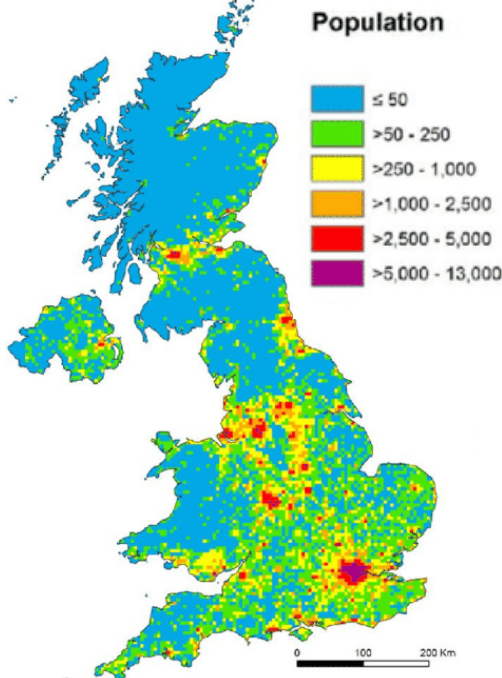


Population density – The number of people per km².



UK Population Distribution

The UK is one of the most urbanised countries in the world. Approximately 82 per cent of people live in towns and cities. The choropleth map below shows population density in the UK.



- The average population density is around 260 people per km²
- Population density varies considerably, from over 5000 people per km² in parts of London to fewer than 50 people per km² in northern Scotland.
- Population density is high across England, particularly in the south and east.
- The highest densities are focused on the major cities regions e.g. London, Manchester and Glasgow.
- The lowest densities are in the north and west of the UK, especially in the uplands of Wales and Scotland.



UK Towns and Cities



- Most major towns and cities are located in England, with few in the west and north.
- Cities are relatively evenly spread out in the south of England. They are relatively clustered in the north due to the concentration of heavy industry and manufacturing.
- Many cities in the industrial heartland of northern England witnessed a slow population growth.
- Cities in the south and east have grown due to the growing service sector.



Urban Issues and Challenges

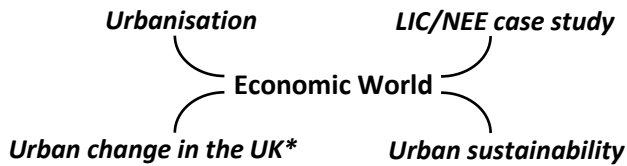
The Location and Importance of London

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The Big Picture



Key Terms



Transnational Corporation – companies that operate in more than one country.



GDP – the monetary value of final goods and services — produced in a country in a given period of time.



The Location of London



National Importance

- London is the UK's largest and wealthiest city. During the twenty-first century the gap in earnings and house prices has increased between the city and the rest of the UK. Wages and house prices have increased rapidly in London.
- London generates around 22 per cent of the UK's GDP, even though it only accounts for 12.5 per cent of the UK population.
- London is a national centre for education, media and communications networks, medial and legal facilities and culture, tourism and entertainment.



International Importance

- London is a world city. Along with New York, London is one of the two most important financial centres in the world. Much of London's finance industry is located at the "Square Mile" or the "City," the long standing business hub of London.
- Many headquarters of international companies are located in London as well as major British companies. The city attracts highly skilled workers from across the globe.
- London is also an international centre for education, media and communications networks, medial and legal facilities and culture, tourism and entertainment.
- London has the second best global air connections in the world after Dubai. It is home to the UK's two busiest airports, Gatwick and Heathrow. These help to maintain its importance as a tourist destination and maintain London's global connections.



Why did London Grow?

Two main factors were important to London's success as a city. These were:

- The city was constructed at the lowest bridging point on the Thames.
- The city became a port because the Thames is a tidal river.

During the 18th century employment opportunities in ports led to many people migrating from rural areas to London. Towards the end of the twentieth century, London's role as a port had significantly declined, however, it remains a hub for the UK's transport network.



Urban Issues and Challenges

The Growth of London

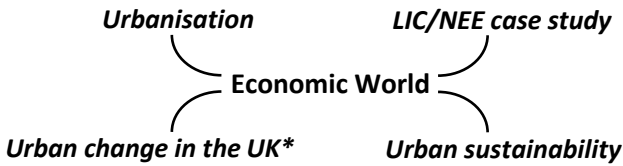


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The Big Picture



Population Changes

- London's population has been growing for most of the last two hundred years.
- In 1801, with just over a million inhabitants, it was the largest city in the world.
- The city grew rapidly during the Industrial Revolution in the nineteenth century due to internal migration in the UK.
- London's population reached its previous peak at the start of the Second World War.
- Its population fell after 1941 due to bombing. Numbers continued to decline after the war as housing was demolished.
- London's population has been increasing since 1991 and is predicted to become a mega city by 2030.

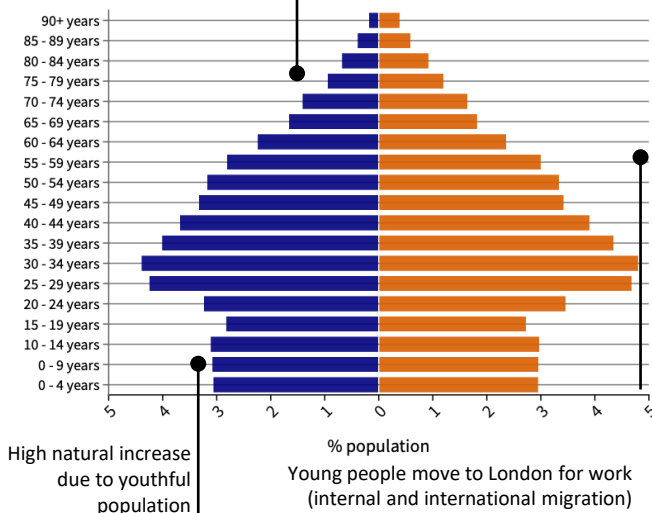


Population Structure

London's Population Structure

% of population ■ Males ■ Females

Low proportion of older people in part due to out migration by older people



The average age is low compared to other UK cities, due to most immigrants being young, a high birth rate and older people migrating from London.



Key Terms



Economic migrant – A migrant moving to improve their standard of living.



Internal migration – Movement of people that does not cross international borders.



International migration – Movement of people crossing international borders.

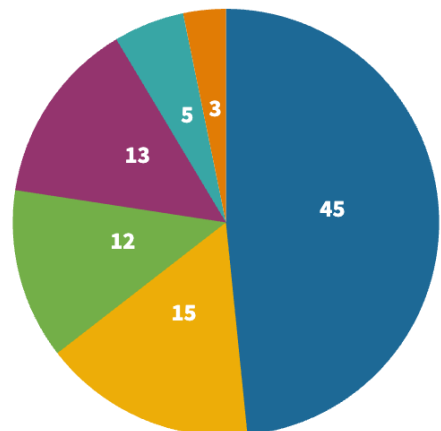


Ethnic Groups

London is the most diverse UK city. Less than half of the population is of white British origin.

The ethnic composition of London's population

■ White UK ■ White other ■ South Asian ■ Black ■ Mixed ■ Other



- Migrants have arrived in London since Roman times.
- Saxons and Normans also settled in London.
- In the seventeenth century, French protestant refugees arrived and settled just outside the city walls to the east of Spitalfields.
- Later, in the nineteenth-century Jewish refugees from Eastern Europe arrived, and more recently, economic migrants from Bangladesh moved to London.
- Each group of migrants have helped change the character of Spitalfields.
- Today, London's population come from all over the world. The largest numbers are from Jamaica, Nigeria and India, as each was part of the British Empire.
- Since 2007, more migrants have come from Eastern Europe due to EU freedom of movement.



Urban Issues and Challenges

Docklands, London

Urban Change Opportunities - Employment



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Dockland Decline

- London lies on the River Thames which flows into the North Sea.
- London's history as a port city dates back to Roman times.
- The construction of docks facilitated the handling of the large quantities of goods and raw materials that arrived in London by ship. Industries such as sugar refineries, flour mills, and timber yards developed near the docks to process these materials.
- With the growth of container ships in the 1970s, the docks became inadequate, leading to their closure by 1980, along with many of the industries that relied on them.
- The area experienced economic decline and deprivation.

- One of the key features of the revitalised Docklands area is Canary Wharf, which now boasts high-rise office buildings housing international banks such as HSBC.
- With over 100,000 people employed there (compared with 28 000 in 2000), and in conjunction with the City of London, Docklands has helped make London a major global financial centre.
- There is now 14 million square feet of office and retail space providing employment.



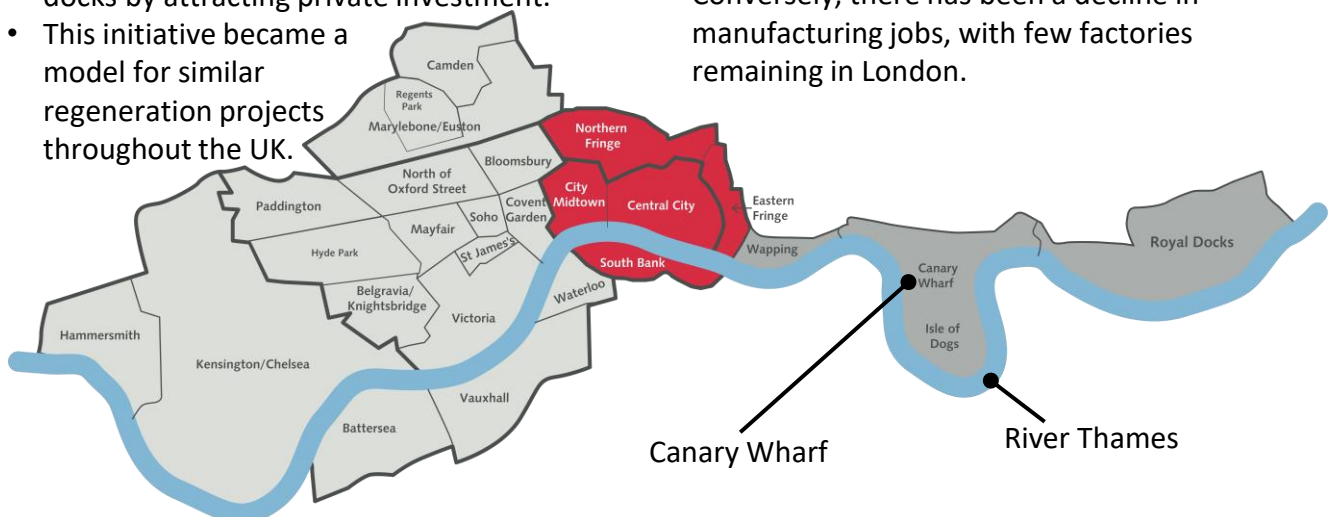
Employment Opportunities

Since 1994, London has experienced almost continuous job growth, with the number of jobs rising despite the recession that followed in 2007. Most new jobs have been in the service sector, particularly in "Professional, real estate and business services," which encompasses various professions such as management consulting, law and accounting, real estate agents, advertising, and market research. Conversely, there has been a decline in manufacturing jobs, with few factories remaining in London.



New Industries

- The government established the London Docklands Development Corporation (LDDC) in 1981 to revitalise the area around the docks by attracting private investment.
- This initiative became a model for similar regeneration projects throughout the UK.





Urban Issues and Challenges

Urban Regeneration in the UK The Lower Lea Valley

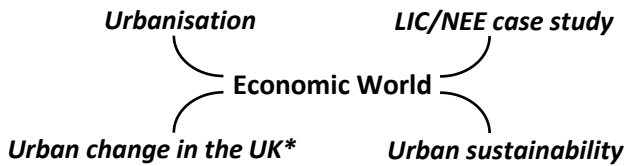


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The Big Picture



Key Terms



Urban regeneration – The revival of old parts of the built-up area by either installing modern facilities in old buildings (renewal) or opting for redevelopment (demolishing buildings and starting new).



The Lower Lea Valley

The Lower Lea Valley in East London, situated north of the London Docklands and mainly within the Borough of Newham. The River Lea, a tributary of the River Thames, flows through the Olympic Park. Before the Olympics, the region was in dire need of urban regeneration.



Why regeneration?

The Lower Lea Valley needed regeneration because:

- The docks and manufacturing industries had closed
- The area was one of the most deprived communities in the country
- Unemployment was high
- Educational achievement was low
- There was a high incidence of poor health
- More infrastructure was required
- The quality of the environment required improvement



Regeneration Overview

The bid for the 2012 London Olympics was successful, in part, because of the plan for Stratford to be used during the games and the regeneration of the area for local people to use after the event. Brownfield regeneration has included:

- New sports venues (London Stadium, Aquatics Centre, and Velopark)
- London Legacy Development Corporation (LLDC), turning the area into a world-class, sustainable and thriving neighbourhoods to make the Olympics legacy a reality.



Regeneration Overview

- Here East - a hub for creative industries, employing 5,000 people.
- A landscaped park with natural habitats and a range of tourist attractions.
- Athlete's Village converted into residential accommodation. Known as East Village, it provides 2,800 homes for locals and people who have moved into the area.
- Developing the International Quarter, a new high-rise office development employing 25,000 people.
- The East Bank development is a new cultural centre for London, home to organisations such as BBC Music, Sadler's Wells Theatre, London College of Fashion and the V&A Museum.



Regeneration Impact

Social

- 40% of the 10,000 new homes are affordable.
- There is a new academy for 1800 pupils
- Community use of Olympic sports facilities.
- Free access to parklands and waterways.

Economic

- £9 billion in extra income for the UK from the Olympics.
- New jobs in construction and tourism created by the multiplier effect.
- By 2030 there will be 20,000 new jobs bringing £5 billion to the local economy.

Environmental

- Sustainable transport solutions e.g. walking and cycling paths and cycle hire.
- Homes designed to use water efficiently.
- The park and wetlands have preserved habitats.



Urban Issues and Challenges



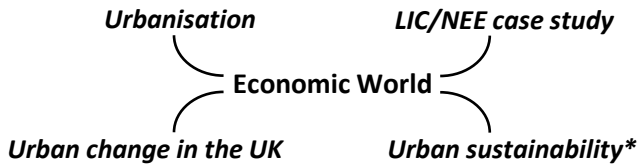
Sustainable Urban Living – East Village

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The Big Picture



Key Terms



Sustainable energy supply – Energy that can be used well into the future without affecting future generations.



Renewable energy sources – An energy resource that cannot be exhausted.



Combined heat and power – Generate electricity and heat from the same source.



Background

East Village is one of the most sustainable communities in the UK. It is part of the London 2012 Olympic legacy and was converted from the Athletes' Village into new homes after the Games. East Village was provided 2,800 new homes for both newcomers and local residents. It was built to high standards of sustainability.

Integrated transport solution

10 Acres of parkland

Green roofs to slow run-off

Modern, high density energy efficient apartments

What makes East Village sustainable?

Affordable housing

Cycling and walking routes

Small, independent businesses

Public services e.g. health and education



Water and Energy

- Water use in East Village is 50% less than typical in urban areas, achieved through recycling water using wetland reed beds.
- Rainwater is filtered naturally before being recycled and used for irrigating plants and flushing toilets. Fresh water is on a separate system.
- East Village uses 30 per cent less energy than an average urban area. This is because of combined heat and power (CHP).



Waste recycling

- 99% of parkland waste is recycled instead of being sent to landfill.
- Households are also encouraged to recycle with fortnightly collections of cardboard, paper, plastic bottles, tins and cans.
- Recycling is taken to a sorting facility at Jenkins Lane Reuse and Recycling Centre where materials are separated. The sorted materials are made into bales and sent off to be recycled into new products.



Creating Green Space

- Although East Village is a high-density urban area, 37 per cent of the land is green open space including:
- a wetland area that recycles rainwater, which is used for flushing toilets and water plants;
- a large green park containing a children's play area;
- green roofs;
- each apartment block having a shared, private green space; and
- fruit trees in an orchard in the children's play area.

