

DP IB Geography: SL



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Changing Urban Systems

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Population Change in Urban Areas

Urbanisation

- More people now live in towns and cities than in rural areas
- **Urbanisation** varies across the globe and is the **increase** in the **percentage** of a **population living in urban areas**
- Urban settlements differ from rural ones in terms of:
 - **Way of life:** faster-paced
 - **Size:** larger
 - **Density of buildings and people:** compact and high
 - **Economy and employment:** finance, service, and manufacturing
- HICs show the highest levels of urbanisation, with the lowest levels in Africa and Southeast Asia
- The world population doubled between 1950 and 2015, but the urban population more than trebled due to:
 - The decline of industry in developed countries, as the industry moved overseas to emerging countries (cheaper workforce, incentives, tax breaks, etc)
 - This led to industrial growth in emerging countries and 'pulled' people from rural regions to urban areas, with the hope of a better life and employment
- High rates of urbanisation occur in LICs because:
 - Most new **economic development** is concentrated in the big cities
 - **Push-pull factors** lead to high rates of rural-to-urban migration
 - Cities are experiencing higher levels of **natural increase**

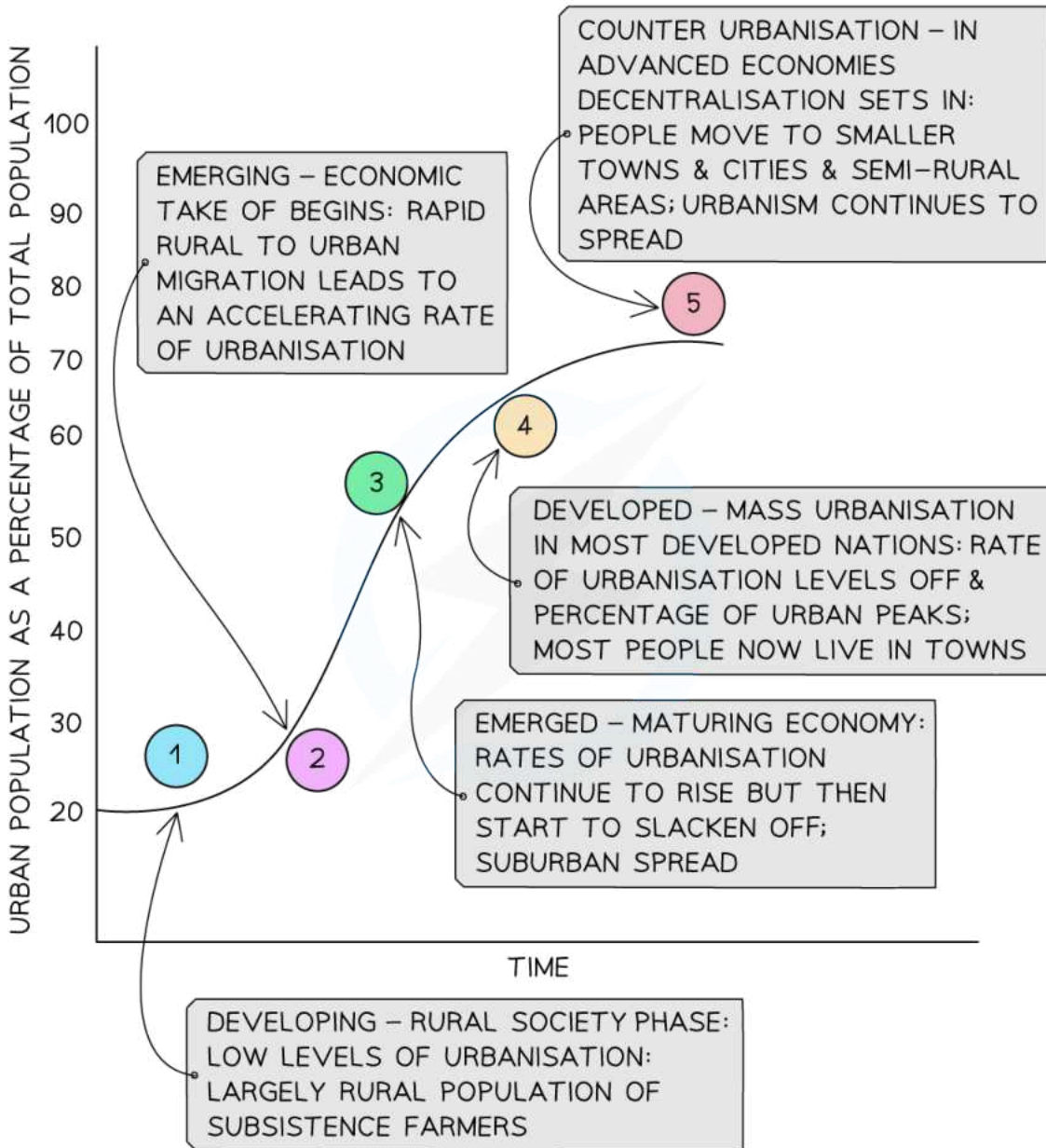
Urbanisation pathway

- The differences between HICs and LICs can be shown in a pathway over time
- Countries become more urban as they develop economically
- As they move through the stages, the pace begins to slow and begins to flatten out or decline as counter-urbanisation gains speed

A diagram to show the urbanisation pathway



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Urbanisation pathway

Natural Increase

- **Natural increase** is the difference between the number of births and the number of deaths
 - It accounts for approximately 60% of urban growth

- This is the result of decreased death rates and higher birth rates
 - Death rates are lower because:
 - The population has a younger average age than in rural areas
 - Healthcare tends to be better in urban areas
 - The more youthful population leads to higher birth rates because more people are of childbearing age



Examiner Tips and Tricks

Do not confuse urbanisation with urban growth.

Urban growth is an increase in the population size of an urban area.

Urbanisation is an increase in the proportion of people living in urban areas.

For example, on one street, there were 5 new migrants, 10 births and 2 deaths. The urbanisation increase is 5 people because migrants have moved into an urban area. The natural increase is 8 people because the migrants are not included. If the migrants then had children, then the children would be included in the natural increase rate.

Centripetal Population Movements

Centripetal movements

- **Centripetal movement** refers to the movement of people **towards the urban centre**, including:
 - Rural-urban migration
 - Urban redevelopment
 - Re-urbanisation

Rural-urban migration

- **Rural-urban migration** is one type of movement into the city
- The causes of rural-urban migration are push and pull factors
- The **pull factors** are those things which attract people to the cities from rural areas, including:
 - Better housing
 - Improved sanitation



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- Jobs
- Better services
- The **push factors** are those things which are causing people to leave rural areas, including:
 - A lack of jobs
 - Poor housing
 - Lack of sanitation
 - Fewer services
 - Lack of infrastructure

Urban redevelopment (gentrification)

- Redevelopment transforms areas of a city from low-value to high-value
- This is also known as **gentrification**
- It is usually the result of middle-class (higher-income) residents moving into an area to redevelop the buildings
- This process attracts more people with higher incomes as well as businesses
- Urban redevelopment **changes** the **population structure** of the area
- Urban redevelopment also has disadvantages, including:
 - The poorer existing population being forced out due to rising house prices

Re-urbanisation

- The movement of people **back into the cities** from the surrounding area
- Movement is the result of several factors, including:
 - Increase in jobs
 - **Regeneration** of older areas either through rebuilding or redevelopment (factories into spacious apartments)
 - Improvements in air quality
 - Improvements in safety



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Centrifugal Population Movements

Suburbanisation

Centrifugal movements

- Centrifugal movement refers to **any movement outwards** of the **city centre**, including:
 - Suburbanisation
 - Counter-urbanisation
 - Urban Sprawl
- There are several reasons for the movement of people away from urban areas:
 - High land prices
 - Congestion
 - Pollution
 - High crime rates
 - A lack of community
 - Declining services

Suburbanisation

- As towns grow, they expand outwards by a process known as **suburbanisation**
 - This growth adds to the built up area, but the **building densities** are generally lower than in the older parts of the town
 - The new suburbs are made up of mostly houses but also include places of employment and services

Causes of suburbanisation

- There are several causes of suburbanisation including:
 - Improved transportation makes movement between the suburbs and CBD easier
 - Larger homes and more space
 - Lower-cost housing
 - Lower crime rates



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- Improved environment, with lower pollution levels and more green space

Impacts of suburbanisation

- Urban settlements may continue to prosper and grow, people move out of the town or city altogether and commute to work:
 - The places they move to are called **dormitory settlements** because many residents only sleep there.
 - They continue to have links with the town or city they have left
 - They still make use of urban services, shops, education, and healthcare in the city
- Urban sprawl
- Wealth and business shift to the suburbs
- Social segregation as the wealthier population moves to the suburbs, leaving the less wealthy in the cities

Counter-urbanisation

Counter-urbanisation

- This is the movement of people **from** an urban area **into** the surrounding rural region. **Causes** include:
 - **Mobility and accessibility:** higher personal car ownership, increase in public transport and road development making easier access to rural areas
 - **Increased wealth:** making housing and travel more affordable
 - **Agricultural decline** (mechanisation and merger of farms): more land becomes available for housing and agricultural workers leave the area
 - **Green belt:** this prevents building in the area immediately around the urban area so people need to go further out to get the rural life they are looking for
 - **Second homes and early retirement:** have increased the movement of people from the city to the countryside

Urban sprawl

- **Urban sprawl** is the uncontrolled growth of the city into the surrounding rural areas and the expansion of population away from central urban areas into low-density rural-urban fringe
- There are several negative environmental, social and economic impacts, including:
 - Air pollution

- Habitat loss
- Traffic congestion
- Social isolation



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Urban System Growth



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Infrastructure Improvements

- As urban areas grow, the need for **infrastructure** and **services** increases
- The urban population needs:
 - Access to clean water
 - Sanitation
 - Waste disposal
 - Transport facilities
 - Telecommunications networks
- Successful urban areas ensure that infrastructure and services increase at the same rate as the population
- This ensures that they are able to:
 - Support and attract economic activity
 - Minimise the risk of disease
 - Reduce congestion
 - Minimise pollution
- Many cities struggle to meet the challenges of providing effective infrastructure
- This is a particular issue in LICs
- In LICs, cities are rapidly expanding, posing greater challenges with:
 - Traffic congestion
 - Air pollution
 - Unclean water
 - Poor telecommunications
 - The disposal of waste

Access to clean water and sanitation

- Providing access to clean water and sanitation involves creating:



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- An infrastructure of pipes to deliver clean water
- Treatment works
- Toilets
- Urban system growth requires **adequate** and **reliable water supply** and distribution systems
 - **Infrastructure improvements** includes upgrading pipes, pumps, valves, meters, treatment plants, reservoirs, etc.
 - This can reduce water loss, improve the quality of the water, and increase drought resilience of urban areas
- Along with providing clean water and hygiene facilities, sanitation also deals with the **management and disposal** of human and animal waste
- Sanitation improvements have several positive impacts on urban system growth, including:
 - Helping to improve hygiene and reduce the spread of waterborne diseases
 - Enhancing quality of life and well-being
 - Attracting investment and economic activity
 - Protecting the environment

Waste disposal

- Increased population leads to issues with waste
- The UN estimates that urban areas produce between 7 to 10 billion tonnes of waste each year
- Poor waste disposal increases:
 - The spread of diseases
 - Air, water and land pollution
- Waste disposal is a major challenge to urban system growth
- Waste disposal affects:
 - The **environmental quality** and **health** of the urban residents
 - Involves the **collection, treatment, and disposal** of solid and liquid wastes generated by urban activities
- Infrastructure improvements can involve:
 - Waste management systems that minimise waste sent to landfills or being burned
 - Waste to energy facilities

- Improved waste collection
- Low-emission waste collection vehicles
- Education of the public regarding waste reduction and use of biodegradable materials

Transport facilities

- Increased use of private cars and growing populations have led to more pressure on urban transport systems
- Efficient transport is essential for moving goods and people around urban areas
- Poor transport infrastructure leads to:
 - Air pollution
 - Traffic congestion

Telecommunication networks

- Access to efficient telecommunications is essential for economic development because it:
 - Helps improve communication between businesses, residents and governments
 - Improves opportunities for remote work and education
 - Increased access to information and services
- Telecommunications include:
 - Telephone
 - Internet access



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Case Study: Urban Systems Growth

Case Study: Shanghai

Background

- Shanghai is located on the east coast of China, on the Yangtze river delta
- In terms of population, Shanghai is the largest city in China
- It is one of the fastest-growing and most populous cities in the world
 - It has a population of over **29 million people** (2023)
 - This is **increasing** at annual rate of over **2.5%**
- The urban area of Shanghai covers over **6 000 km²**
 - The urban area is increasing at a rate of 1.6% per year
- Shanghai has a variety of functions, including:
 - Ports
 - Finance and trade
 - Retail
 - Recreation
 - Tourism
 - Business
- The rapid growth of Shanghai and its size mean that the city faces many infrastructure challenges

Shanghai skyline



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Access to clean water in Shanghai

- It is estimated that over 85% of the water in the rivers supplying Shanghai is undrinkable
 - Over 56% is unfit for any purpose
- The main water sources were from the Huangpu and Yangtze Rivers
- Pollution from industrial and agricultural activities have led to significantly decreased water quality
 - In 2013, thousands of dead animals were found in rivers supplying Shanghai's water
- Most recently, the main source is the Qingcaosha reservoir
 - This source contains less raw sewage, chemicals and heavy metals
- The majority of people have access to piped water in Shanghai
 - The quality of the water is often poor
 - Over 80% of Shanghai's water is now treated but only an estimated 5% reaches the desired levels of cleanliness
 - Many of the pipes are old and contain lead
- In 2022, a drought led to water shortages in Shanghai
- **Salt water intrusion** increased the shortages

Sanitation in Shanghai

- In 1987, the World Bank worked with the city of Shanghai to launch the \$153 million Shanghai Sewage Project
 - This project aimed to build water and wastewater infrastructure
- Access to sanitation has improved to 99% in Shanghai

Waste disposal in Shanghai

- The increase in population has led to the city producing over 30 000 tonnes of waste every day

- Before 2019, approximately half the waste was burned and half was sent to landfill
- Much of the waste was sent to unregulated heaps leading to land and water pollution
- In July 2019, a compulsory waste-sorting policy came into effect
 - This decreased the amount of waste sent to landfill or burned
 - burning of waste is also used to generate electricity

Transport in Shanghai

- Shanghai has one of the busiest transport infrastructure in the world
- The Yangshan Deep Water port has an annual cargo of over 600 million tonnes
- Shanghai also has two international airports and four airport terminals
 - These have 70 million passengers a year and Pudong Airport has the world's third-largest cargo movement.
- The rail network carries over 5 million people a year:
 - It has 508 stations
 - There are 20 lines
- The Shanghai bus network has over 2 000 routes
 - There are an estimated 18 500 buses
- There are continuous developments in Shanghai's transport infrastructure, including:
 - A new subway route
 - A new container terminal
 - Rail projects to make Pudong International airport more accessible
 - An integrated transportation hub in the Pudong area
 - Electric buses

Telecommunications in Shanghai

- In 1949, approximately 30% of all phone lines in China were in Shanghai
- It now has the highest density of 5G sites



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