

IGCSE

Urban Environments



Favela Rocinha in Rio de Janeiro Photo: REX FEATURES

Case study booklet:
Emerging Country
Brazil

Urban Issues and Challenges - Case Study

Urban Growth in Rio, Brazil

Location

Rio de Janeiro is a major city on the south-east coast of Brazil around Guanabara Bay which flows into the Atlantic Ocean. It has 4 zones;

North Zone

Industry, Squatter settlements

Center / Centro Zone

Historic buildings and CBD/Finance

West Zone

Wealthy suburbs, industry, Olympics

South Zone

Hotels, beaches, luxury flats and Rocinha, largest favela in S. America



Why is Rio an important city?

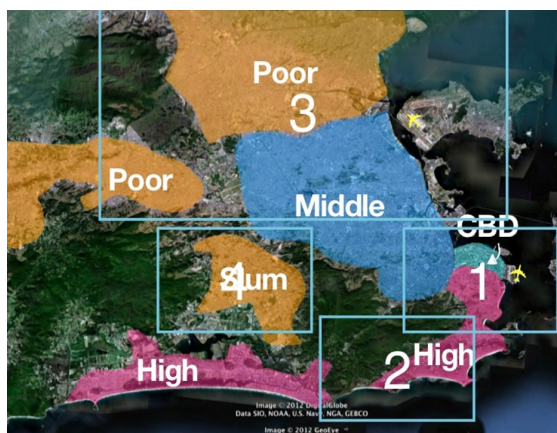
- Cultural capital of Brazil and UNESCO World Heritage site
- Hosted 2016 Olympics and matches during the 2014 World Cup
- Christ the Redeemer statue (1 of 7 new Wonders of the World)
- International, National and Regional industrial centre + Port

Why has Rio de Janeiro grown?

Economic activities attract migrants from many different places;

- The Amazon Basin (Rural to Urban Migration)
- Argentina and Bolivia
- S. Korea and China seeking business opportunities
- Portugal (common language)
- Skilled workers from the USA and UK

Urban growth in Rio de Janeiro



It is an example of a **Growing Megacity** = Population between 40-50% urban with under 20% in squatter settlements. They are found in S.E. Asia and South America e.g. Beijing / Rio de Janeiro.

Rio's period of extremely rapid growth (1960-80) has slowed, yet growth is still at a rate of over 1 million a decade.

Rio de Janeiro is a city of contrasts with a huge gap between rich and poor. About 27% of Rio's population are favela dwellers.

There are an estimated 1000 favelas in the city, the largest being Rocinha with a recorded number of 150,000 dwellers.

Urban Issues and Challenges - Case Study

Urban Growth (Opportunities and Challenges) - Rio, Brazil

What are the Challenges and Solutions?

Access to Services - Education

- Only half of children continue their education beyond the age of 14 because of;
 - A shortage of schools and teachers
 - A Lack of money and a need for teenagers to work to support their families
- + The authorities have;
 - Given school grants to poor families
 - Operated a private university in the Rocinha favela

What are the Challenges and Solutions?

Access to Resources - Water Supply

- 12% of Rio's population had no running water
- 37% is lost through leaks and illegal access
- Droughts make water expensive
- + 300km new pipes and 7 treatment plants built
- + In 2014, 95% of the pop. had mains water

Access to Resources - Energy

- Frequent power cuts and blackouts
- Many poorer people get their electricity by illegal tapping into the main supply
- + 60km of new power lines installed
- + A new nuclear generator built

How have Rio's industries created economic development?

- Rio's industrial areas have boosted the city's economy
- Rio provides over 6% of Brazil's employment
- Economic development improved transport and environment
- Favelas improved and large companies were attracted
- **Economic opportunities** have developed in the **formal economy**

Employment type

Service industry
Tourism / Retail
Manufacturing
Steel / Construction
Oil refinery
Port industries

What are the challenges?

Unemployment

- A recession in 2015 increased unemployment in Rio. There are wide contrasts in wealth
- Unemployment rates in favelas are 20%+. Most people work in the **informal economy** where jobs are poorly paid and irregular

Crime

- Murder, kidnapping and armed assault occur regularly. Powerful gangs control drug trafficking in many of the favelas

What are the solutions?

Unemployment

- + The Schools of Tomorrow programme aims to improve education in the poor and violent areas
- + Free child care is provided to enable teenage parents to return to education

Crime

- + In 2013, Pacifying Police Units (PPUs) were established to reclaim favelas from Drug dealers
- + Police have taken control of some crime dominated favelas

Urban Issues and Challenges - Case Study

Urban Growth (Opportunities and Challenges) - Rio, Brazil

What are the Challenges and Solutions?

Access to Services - Health Care

District	Zone	Infant Mortality per 1000	Pregnant females getting medical care	Ave. Life Expectancy
Cidada de Deus	West	21	60%	45
Barra deTijuca	South	6	100%	80
Rio de Janeiro		19	74%	63

The table above shows the health care in two contrasting districts and Rio overall. As you can see, there is significant difference between the 2 areas.

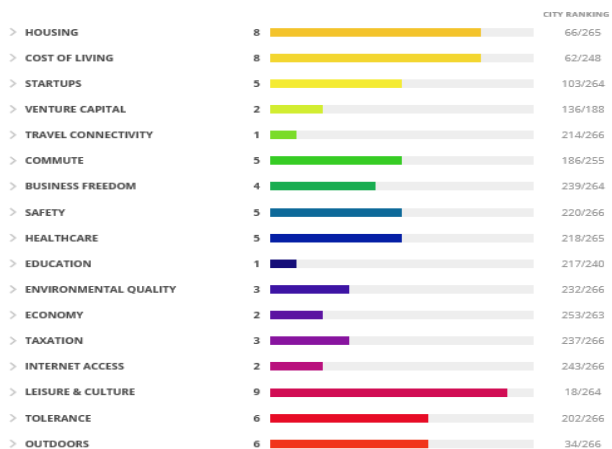
- + Medical staff detect and treat 20 different diseases in people's homes. This reduces The infant mortality rate and increases life expectancy

What is the quality of life in Rio like compared to the national average?

- In Brazil, the average household net-adjusted disposable income per capita is lower than the OECD average of USD 30 563 a year.
- In Brazil, the average household net financial wealth is 7 102, considerably lower than the OECD average of USD 90 570.
- Brazilians are just as satisfied with their lives as the OECD average. When asked to rate their general satisfaction with life on a scale from 0 to 10, Brazilians gave it a 6.6 grade on average, broadly in line with the OECD average of 6.5.
(source: Organisation for Economic Co-operation and Development).

Country	Quality of Life Index
Brazil	94.75
Chile	140.86
Sri Lanka	32.35
India	106.28
Thailand	49.48

LIFE QUALITY SCORE



Rank	City	Quality of Life Index	Purchasing Power Index	Safety Index	Health Care Index	Cost of Living Index	Property Price to Income Ratio	Traffic Commute Time Index	Pollution Index	Climate Index
197	Rio de Janeiro, Brazil	68.83	36.57	22.22	43.33	44.12	24.58	53.21	71.64	87.38

Urban Issues and Challenges - Case Study

Urban Growth - Environment Issues - Rio, Brazil

Air Pollution and traffic congestion

Air pollution causes around 5000 deaths per year in Rio. Smog occurs in still conditions, when natural mist or fog mixes with vehicle exhaust fumes and pollutants from factories. Traffic congestion increases stress and pollution because;

Problems

- Steep mountains limit where roads can go
- The number of cars have grown
- High levels of crime

Solutions

- Expansion of the metro system (cutting car use)
- New toll roads (so people reduce car use)
- Making coast roads one-way during rush hour



Water Pollution

Problems

- Rivers are polluted by open sewers in the favelas because the government has not paid for sewage pipes
- There have been oil spills from the Petrobras oil refinery
- Guanabara Bay is highly polluted
- Ships empty their fuel tanks in the bay

Solutions

- 12 new sewage works have been built since 2014
- Ships are fined for discharging fuel illegally
- 5km of new sewage pipes have been installed



Waste Pollution

Problems

- Many favelas are on steep slopes with few Proper roads so waste collection is difficult
- Most waste is dumped and pollutes the water system causing diseases and encouraging rats

Solutions

- A power plant has been set up which consumes 30 tonnes of rubbish a day and produces enough electricity for 1000 homes

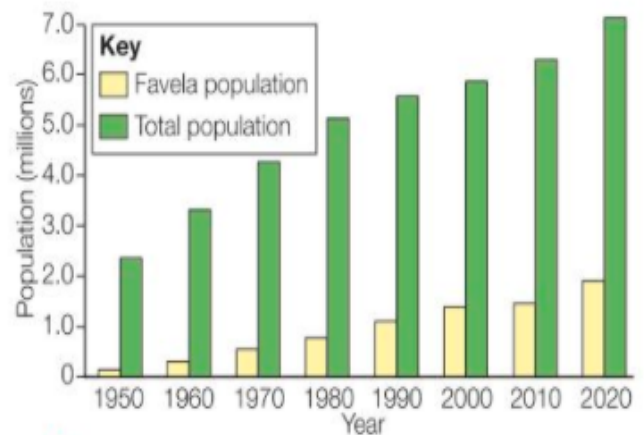


Urban Issues and Challenges - Case Study

Urban Growth - Challenges in Favelas

Why have favelas grown?

- In Brazil, **squatter settlements** or slums are called favelas. They are illegal settlements where people build homes on land they do not own, partly caused by high housing costs.
- The graph shows the total population of Rio has increased by nearly 5 million between 1950 and 2020, whilst the favela population has increased by 2 million.



What is Rocinha like? It is the largest favela in Rio / South America. It now has;

- 90% of houses built with brick, with electricity, running water and sewerage system
- Bars, travel agents and shops (McDonald's), schools + university and health facilities

What are the challenges in squatter settlements?

Urban growth can create squatter settlements, where people face challenges

Crime

- A high murder rate of 20 per 1000 people in many favelas
- Drug gangs can dominate

Health

- Infant Mortality rates are high as 50 per 1000
- Waste cannot be disposed and builds up in the street, increasing the danger of diseases

Services - In the non-improved fav

- 12% of homes have no running water
- 30% have electricity
- 50% have no sewerage connections

Unemployment

- Unemployment rates as high as 20%
- Average income less than £75 per month

Construction

- House are built with basic materials on steep slopes
- Heavy rain can cause landslides



Urban Issues and Challenges - Case Study

Risk from Hazards—April 2010

- The steep mountains that surround the narrow, flat coastal strips of land have affected the physical growth of Rio.
- The mountainous relief limits the space for building difficult.
- Many of the favelas are built against the steep mountain sides, which make it very unsafe and at risk from hazards such as landslides, and flooding.

Floods and landslides kill 95 in Rio slums after city's worst rainstorms

Desperate search for survivors after 9 inches of rain falls in 24 hours and downpour continues



▲ A firefighter carries the body of an infant who died in a landslide in the Morro de Borel area of Rio de Janeiro. Photograph: Fabio Goncalves/ASSOCIATED PRESS

Between Monday, 5th April 2010, and Tuesday, 6th April 2010, nearly nine inches of rain fell on Rio de Janeiro in less than 24 hours, authorities said. The Brazilian TV station 'Globo' claimed the rainfall was equivalent to 300,000 Olympic swimming pools of water crashing down on the city. The state governor, Sergio Cabral, said the storms were the worst in Rio's history.

Rio's favelas, poorly built shanties that cling precariously to the city's hillsides and house an estimated fifth of the city's 6 million residents, bore the brunt of the casualties. Thirteen people were reported to have died in the Morro dos Prazeres shantytown, located in the hilltop Santa Teresa district popular with European tourists, after tons of mud and debris crashed down on to their homes. Many homes were buried under mudslides.

Urban Issues and Challenges - Example

How urban planning is improving Q of L - Barrio Favela Project, Rio

Location

This is a site and service scheme - the local authority provides land and services for residents to build homes.

Complexo do Alemão is a group of favelas in Rio's north zone (see previous case study map).

Improvements (**Social**)

- Paved roads
- Access to Water supply
- Improved sanitation
- Cable car system (free return ticket per day)
- Pacifying Police Units (PPU) on patrol



How have the Olympics affected the favelas?

Some favelas were demolished to make way for the developments for the 2016 Olympics Games. The small town of Campo Grande saw 800 new houses being built;

- + For some residents the houses are better than the favelas (**social**)
- Campo Grande lacks a sense of community (**social**)
- Has no shops and is 90 mins drive from Rio centre (**economic**)



Has the Favela Barrio Project been a success or a failure?

- + The quality life, mobility and employment prospects of the inhabitants have improved (**social** and **economic** factors)
- The newly built infrastructure is not being maintained
(**Cable Car stopped in 2017 due to financial losses - economic**)
- Residents lack the skills and resources to make repairs (**social - economic**)
- More training is needed to improve literacy and employment (**social - economic**)

EXAM PRACTICE:

1. Define what is meant by the term shanty town (2)
2. Outline 2 strategies for improving shanty towns (4)
3. Explain the link between overcrowding and hazards. (4)
4. Analyse the different challenges that affect urban environments emerging or developing countries. (8)
5. Explain how migration has been responsible for the growth of Rio's population (4)



EXTRA READING:

<http://www.oecdbetterlifeindex.org/countries/brazil/>

Hazards—

<http://news.bbc.co.uk/2/hi/americas/8605386.stm>

Life in Rocinha —

<http://www.bbc.co.uk/news/world-latin-america-27635554>

<http://www.bbc.co.uk/news/science-environment-18548682>

Solutions to housing the 'urban poor' -

<http://www.bbc.co.uk/news/world-latin-america-13957096>

Youtubeclip—Inside Rio's Favelas, the city's neglected neighbourhoods.