

# GCSE GEOGRAPHY

## CASE STUDY

### KNOWLEDGE BOOK



An Urban World: Rio (city in a NEE)

## AN URBAN WORLD: RIO (CITY IN AN NEE) – QUESTIONS TO THINK ABOUT

1. Assess the opportunities. How big are they? How significant? How important?
  - Water
  - Health
  - Education
  - Energy
  - Employment
2. Why do people want to access these (water, health education, energy, employment)?
3. How will these improve people's quality of life (water, health education, energy, employment)?
4. Assess the challenges. How big are they? How significant? How important?
  - Water
  - Health
  - Education
  - Energy
  - Crime
  - Employment
  - Sanitation
  - Pollution (Air, water, waste)
  - Managing the urban favelas/slums
5. How do these challenges affect people's quality of life?
6. To what extent has urban change created opportunities in a LIC/NEE city you have studied?
7. For a city in an NEE/LIC you have studied, to what extent does it provide both opportunities and challenges?
8. How successful have the authorities been in overcoming the challenges in Rio?
9. Evaluate the effectiveness of an urban planning strategy in helping to improve the quality of life for the urban poor

**Social Challenges in Rio: Clean water, sanitation systems and energy**

<b>WATER SUPPLY Challenges</b>	<b>Opportunities</b>	<b>Assess: How important is this? How big are the challenges/opportunities?</b>
<ul style="list-style-type: none"> <li>• 12% of Rio's population did not have access to running water</li> <li>• 37% of water is lost through leaky pipes, fraud and illegal access</li> </ul>	<ul style="list-style-type: none"> <li>• Improved quality and quantity of water in the favelas in and around Olympic park</li> <li>• 7 new treatment plants built between 1998 and 2014 and 300km pipes laid</li> <li>• By 2014, 95% of the population had a mains water supply</li> <li>• Recently drought has increased the pressure on water supply as reservoirs have dried up (e.g. Santa Branca)</li> </ul>	
<b>SANITATION Challenges</b>	<b>Opportunities</b>	<b>Assess: How important is this? How big are the challenges/opportunities?</b>
<ul style="list-style-type: none"> <li>• Many people have no access to flush toilets using pits instead – sewerage drains into soil (polluting groundwater) or pours into open drains and rivers</li> <li>• Many of Rio's rivers and Guanabara Bay itself are heavily polluted with raw sewerage – an estimated 200 tonnes per day</li> </ul>	<ul style="list-style-type: none"> <li>• Overseas aid has been used to reduce the amount of sewage being release into the bay</li> <li>• 12 new sewerage works have been built since 2004 at a cost of US\$68 million</li> <li>• 5km of new sewerage have been installed around badly polluted areas</li> </ul>	
<b>ENERGY Challenges</b>	<b>Opportunities</b>	<b>Assess: How important is this? How big are the challenges/opportunities?</b>
<ul style="list-style-type: none"> <li>• Frequent blackouts – growing population and demands of forthcoming Olympics will make situation worse</li> <li>• Affects hospitals, schools, industry and residents</li> <li>• Many people in poorer part of Rio illegally tap main supply</li> </ul>	<ul style="list-style-type: none"> <li>• Electricity supplies are being improved by the construction of the Simplicio Hydroelectric Complex at the Paraiba do Sul River which will increase Rio's electricity supply by 30%. The power complex became operation al in 2013</li> <li>• 60km of new power lines</li> <li>• Building a new nuclear generator</li> </ul>	

**Health and Education – Challenges and Opportunities in Rio**

HEALTH CARE Challenges	Opportunities	Assess: How important is this? How big are the challenges/opportunities?
<ul style="list-style-type: none"> <li>• Healthcare is ‘patchy’</li> <li>• 2013 – Only 55% of the city had a local family health clinic and services for pregnant women and elderly were very poor – especially Cidada de Deus (West)               <ul style="list-style-type: none"> <li>○ IMR 21 per 1000</li> <li>○ LE = 45</li> <li>○ 60% of pregnant women getting medical care</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 2013 Barra de Tijuca (South):               <ul style="list-style-type: none"> <li>○ IMR 6 per 1000</li> <li>○ LE = 80</li> <li>○ 1000% of pregnant women getting medical care</li> </ul> </li> <li>• In Santa Marta medical staff take medical kits to people’s homes as transport is often a barrier to care – able to detect 20 disease and treat them. As a result IMR has fallen and LE increased</li> </ul>	
EDUCATION Challenges	Opportunities	Assess: How important is this? How big are the challenges/opportunities?
<ul style="list-style-type: none"> <li>• Compulsory for 6-14 BUT only 50% of all children continue education after 14</li> <li>• Get drawn into drug trafficking and gangs</li> <li>• Level of school enrolment in Rio is low as:               <ul style="list-style-type: none"> <li>○ Lack of schools nearby</li> <li>○ Poverty so need to work</li> <li>○ Shortage of teachers</li> <li>○ Low pay for teachers</li> <li>○ Poor training for teachers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>□ Local authorities are attempting to incentivise by:               <ul style="list-style-type: none"> <li>○ Encouraging volunteers to help in school</li> <li>○ Giving school grants to help meet the cost of keeping their children in school</li> <li>○ Making money available to pay for free lessons in volleyball, football, swimming and squash in Rocincha favela</li> <li>○ Opening a private university in Rocinha favela</li> </ul> </li> </ul>	

### Challenges of unemployment and crime in Rio

UNEMPLOYMENT Challenges	Opportunities	Judgement & evaluation: <ol style="list-style-type: none"> <li>1. Is this important? How important? Why?</li> <li>2. How big a challenge is this to overcome?</li> <li>3. How big are the opportunities?</li> </ol>
<ul style="list-style-type: none"> <li>• Unemployment varies hugely</li> <li>• In the <b>favelas unemployment rates can exceed 20%</b></li> <li>• <b>1/3 of the workforce work in the 'informal sector'</b> (street vending, sewing, car washing, wasted recycling). These jobs are poorly paid, unregulated and often dangerous.</li> <li>• While people work in this sector they do not pay taxes (<b><i>no multiplier effect or investment in services by government</i></b>)</li> </ul> <p>□</p>	<ul style="list-style-type: none"> <li>• <b>'Schools for Tomorrow'</b> programme is using education to teach practical skills to the young (and adults) living in deprived areas – encourage them to seek formal employment</li> <li>• <b>WHY? Drives multiplier effect</b>, taxes and drives investment by government and improves peoples quality of life</li> <li>• <b>Free child care</b> is provided to enable teenage parents to return to education</li> <li>• See 'economic development' already studied</li> </ul>	
CRIME Challenges	Opportunities	Judgement & evaluation: <ol style="list-style-type: none"> <li>1. Is this important? How important? Why?</li> <li>2. How big a challenge is this to overcome?</li> <li>3. How big are the opportunities?</li> </ol>
<ul style="list-style-type: none"> <li>• Crime rates are high, drugs, vandalism and theft</li> <li>• Violent crimes (assault and armed robbery ) are common with criminal gangs controlling drug trafficking in favelas</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Highly trained military</b> were sent into start the <b>pacification process</b> and then the <b>military</b> took control of the favelas</li> <li>• In <b>2013 Pacifying Police Units (PPP)</b> were established to address the problem of the favelas for the local community. Increased police presence has lowered crime rates and even led to tourism in the favelas</li> <li>• However <b>in January 2018 violence has erupted again</b> – many blame the economic crisis causing a <b>cut in police numbers</b> on the streets</li> </ul>	

### Environmental Challenges in Rio: Pollution and Waste Disposal

POLLUTION Challenges	Solutions	Assess: How important is this? How big are the challenges?
<ul style="list-style-type: none"> <li>Air pollution causes 5000 deaths per year in Rio – city often covered in a brown smog as: Heavy traffic and congestion Mist from Atlantic mixes with vehicle exhaust fumes and pollutants from factory chimneys</li> <li>Guanabara Bay is heavily polluted – threat to wildlife and could affect Ipanema and Copacabana beaches which would damage tourism and local economy – pollution is from: The many rivers that flow into the bay are polluted by run of from the favelas open sewers 200 tonnes of raw sewage pours into the Bay each day 50 tonnes of industrial waste enters the bay each day</li> </ul>	<ul style="list-style-type: none"> <li>Since 2004, 12 new sewage works have been built at a cost of US\$ 68 million</li> <li>5 km of new sewage pipes have been installed around badly polluted areas</li> </ul>	
WASTE Challenges	Solutions	Assess: How important is this? How big are the challenges?
<ul style="list-style-type: none"> <li>Rio generates about 3.5 million tonnes of solid waste per year</li> <li>The worst problems are in the favelas – many are built on steep slopes and few have proper roads making access difficult for waste collection lorries</li> <li>Most waste is therefore dumped and this pollutes water which can cause diseases like cholera and encourage rats</li> </ul>	<ul style="list-style-type: none"> <li><b>Recycling</b> is being encouraged and ‘pickers’ operate on the landfill sites to sort and recover materials for use</li> <li><b>Landfill Gas (LFG)</b> is actively collected as source of energy – electricity and fuel for vehicles</li> <li><b>A new biogas (methane)</b> power plant is being set up at the old Grenache landfill site – it consumes 30 tonnes of rubbish a day and produces enough electricity for 1000 homes</li> </ul>	

### Favelas Problem Summary

Challenges of Favelas	Why is this a challenge? How important? Assess size of challenge?
<p><b>Construction:</b></p> <ul style="list-style-type: none"> <li>• Houses poorly constructed out of poor materials</li> <li>• Many favelas built on steep slopes and heavy rain can cause landslides (2010 224 people killed and 13,000 lost their homes)</li> <li>• Limited road access due to steepness of slopes</li> </ul>	
<p><b>Services:</b></p> <ul style="list-style-type: none"> <li>• In non-improved favelas 12% of hoes do not have running water, 30% have no electricity and 50% no sewage connections</li> <li>• Sewers are often open drains</li> <li>• Drinking water obtained by tapping into a city water main and many taps are at the bottom of slopes and require several trips a day</li> </ul>	
<p><b>Unemployment:</b></p> <ul style="list-style-type: none"> <li>• As high as 20%</li> <li>• Many are in informal sector (35%)</li> <li>• Average income less than £75 per month</li> </ul>	
<p><b>Crime:</b></p> <ul style="list-style-type: none"> <li>• High murder rate of 20 per 100 people in favelas</li> <li>• Drug gangs dominate</li> <li>• Many residents distrust he police because of violence and corruption</li> </ul>	
<p><b>Health :</b></p> <ul style="list-style-type: none"> <li>• Infant mortality rates are as high as 50 per 1000</li> <li>• Waste cannot be disposed of and increases in streets</li> <li>• Burning rubbish often sets fire to houses and smoke is harmful to health</li> <li>• 2013 only 55% of Rio had access to health clinic</li> <li>• Guanabara Bay is highly polluted – 55 rivers running into bay heavily polluted from open sewers in the favelas</li> <li>• 200 tonnes of raw sewage and 50 tonnes of industrial waste enter bay each day</li> </ul>	
<p><b>Education:</b></p> <ul style="list-style-type: none"> <li>• Only 50% of all children in Rio stay in education beyond 14</li> <li>• Lack of schools, shortage of teachers and poor training of teacher</li> </ul>	

**Urban Planning in Rio: Favela Bairro: Aim to improve the people's quality of life**

**Favela Bairro is a site and service scheme, where the city's authorities have provided land and services for residents to build homes and ultimately improve their quality of life.**

<b>Solutions in Complexo do Alemão: a group of favelas in Rio's North Zone where more than 60,000 people live.</b>	<b>How it will improve people's quality of life</b>	<b>Is this important? How important? Explain why?</b>
Paved and formally named roads		
Access to water supply and drainage system (sanitation)		
Hillsides secured to prevent landslides or people relocated if needed		
Building of new health facilities		
Building of new educational services		



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Building of Leisure services		
Installation of cable car systems across the entire favela – residents are given one free return ticket a day		
Access to credit to allow residents to buy materials to improve their home		
100% mortgages available for people to buy their homes		
Pacifying Police Unit (UPP) set up with police patrolling the community to help reduce crime		

## Urban Planning in Rio: Favela Barrio – Evaluating Success and Failures

**Word bank for evaluation and judgement:** quite, not very, highly, relatively, to a certain extent, somewhat, very, largely, to a small extent, to a large extent

Successes	How effective – why? How Important? (1-10)	Failures	How ineffective – why? How important (1-10)
Improved quality of life (health, education, employment, sanitation)		Expensive – budget of US\$1 billion may not cover every favela (uneven in its success)	
More mobile residents that can access work - increase employment and wages		Newly-built infrastructure is not being maintained (so may not have long-lasting success)	
UN has recognised model and it has been used in other Brazilian cities		More training needed to improve literacy and employment	
Lower crime rates		Rents rise in the improved favelas and the poorest residents are even worse off	
Safety of residents secured from landslides		Some residents were displaced away from the area	
Roads are more accessible for waste collection			

