



Urban Problems in Rio de Janeiro

Introduction

Rio de Janeiro has traditionally been seen as a city of contrasts with a huge gap between rich and poor. A study carried out in 2000 by the United Nations Development Programme (UNDP) demonstrated that this huge gap still exists. The wealthy people in Rio have a quality of life comparable to that of the Northern Italians, while the poorest people have a quality of life similar to that of Algerians. This Factsheet looks at the way in which Rio's urban problems are being addressed and evaluates the strategies used.

Background - Rio's urban problems and their causes

Rio attracts people from the countryside who hope to find a better life in the city. This continued rural-urban migration of largely young immigrants has led to above average rates of fertility which means that the natural increase in population is much higher in the most recent favelas (largely in the outer suburbs and rural urban fringe – see Fig. 2) than in established areas of the city. The pattern of population growth is summarised in Fig. 1. As spontaneous settlements are forced to develop on available land, most of the sites have been used in the central and inner urban areas. As a result of city policy to build a world class city centre attractive to commerce and tourists, many favelas were moved to outer suburban areas. In inner urban areas, newly established favelas were frequently forced to develop on steep hillsides, where landslides are a threat. Stability has been partially achieved and these favelas now have access to a full range of services such as water and electricity, although sewage systems are limited. In the outer urban areas, where 60% of the favelas are concentrated, living conditions are more variable with many inhabitants having a low standard of living and enjoying a poor quality of life.

Whilst it would seem that Rio's period of extremely rapid growth (1960 – 1980) has slowed (see Fig. 1), nevertheless growth is still at the rate of over a million a decade.

Public services such as education and health have become inadequate as a result of rapid urban growth, further reducing quality of life for those who can not afford to pay for the private alternatives. The lack of jobs has led to the development of an informal sector and to an increase in crime, including drug trafficking.

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 and makes the development of an effective transport network more difficult. Road tunnels through the mountains are often the only way to connect one part of the city to the next. The few existing transport routes have to be used by everyone, which leads to traffic congestion. The mountains surrounding the city trap photochemical smog created by exhaust fumes, resulting in poor air quality.

Fig. 2 shows that Guanabara Bay is a wide bay with a narrow mouth; this shape and its location facing the Atlantic Ocean promote strong currents into and out of the mouth which used to make the bay self cleaning. However, since 1864 raw sewage has been draining straight into the bay, with population growth and industrial growth in Rio worsening the problems this causes. Today there is no marine life left in much of the bay, commercial fishing has decreased by 90% in the last 20 years, and swimming at beaches in the interior of the bay is not advisable.

Fig. 1 The growth of Rio de Janeiro

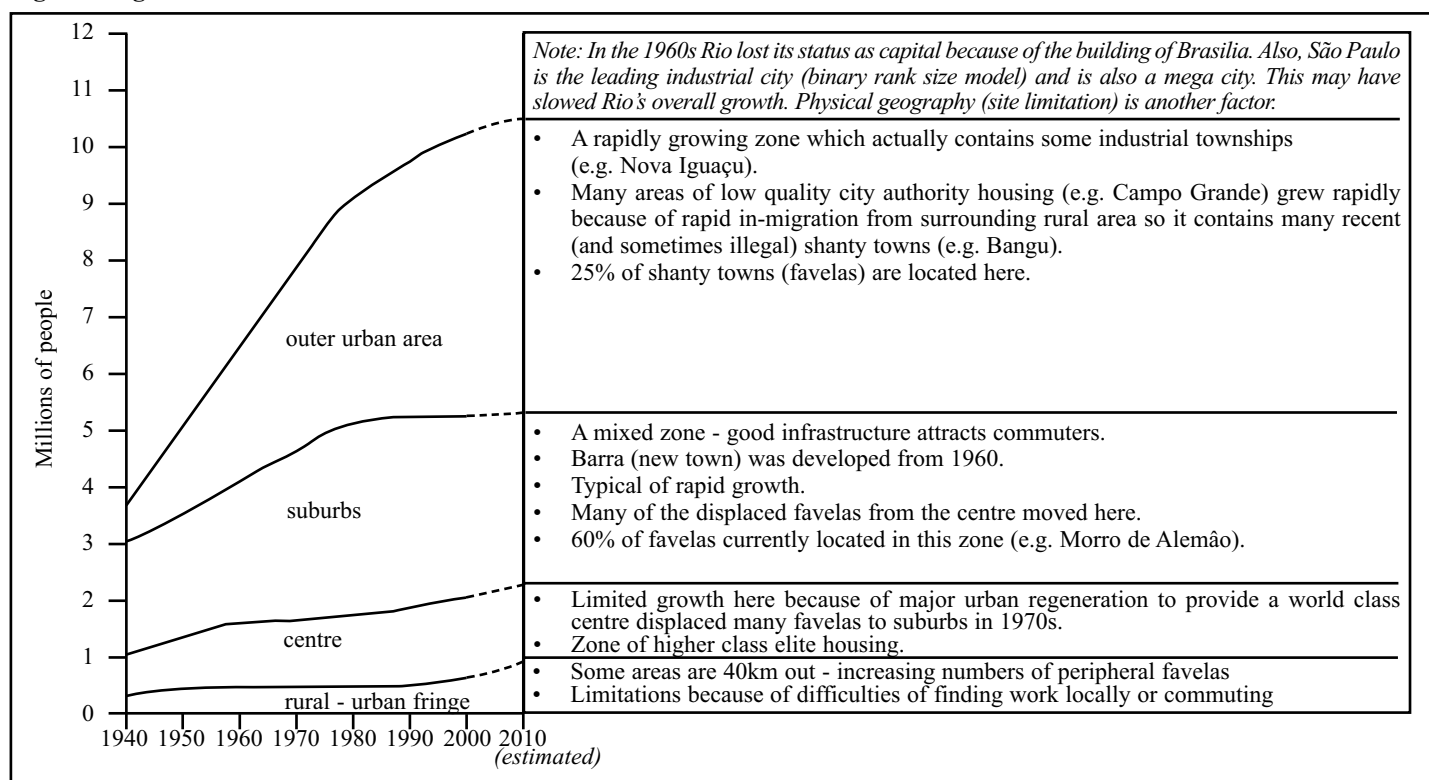


Fig. 2 Urban problems in Rio de Janeiro

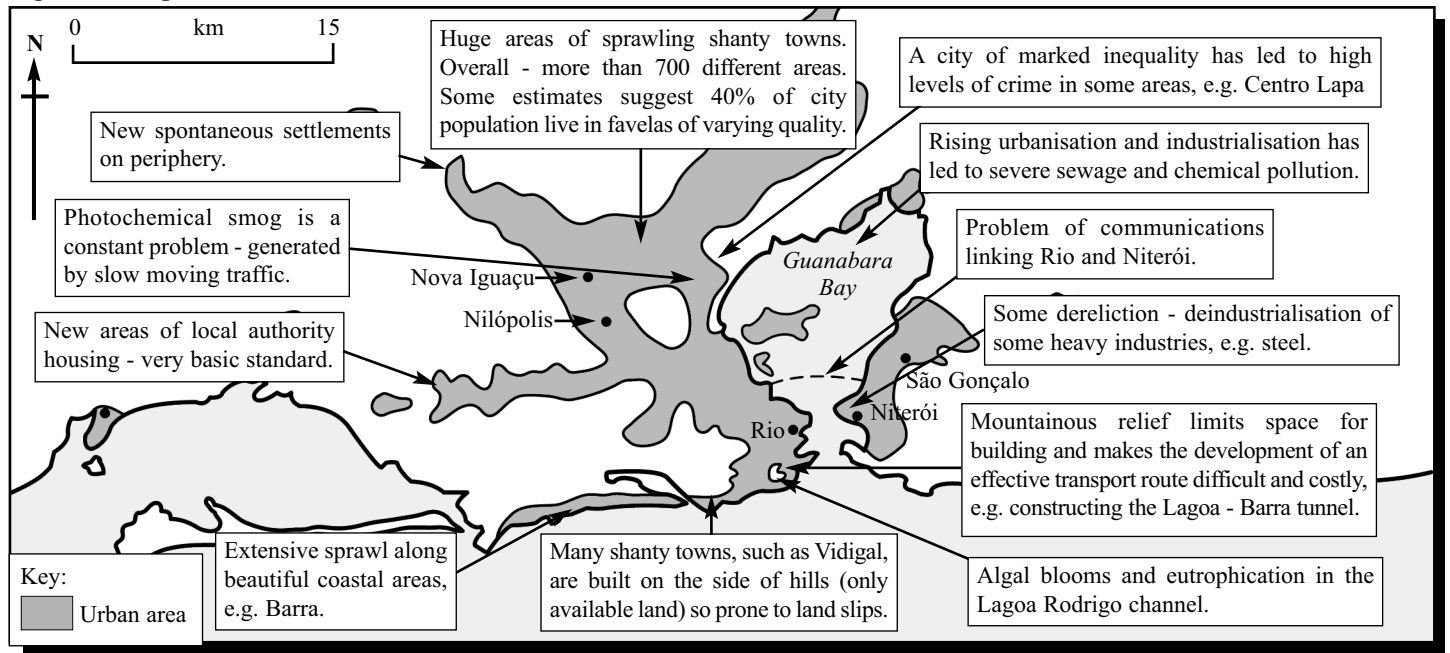
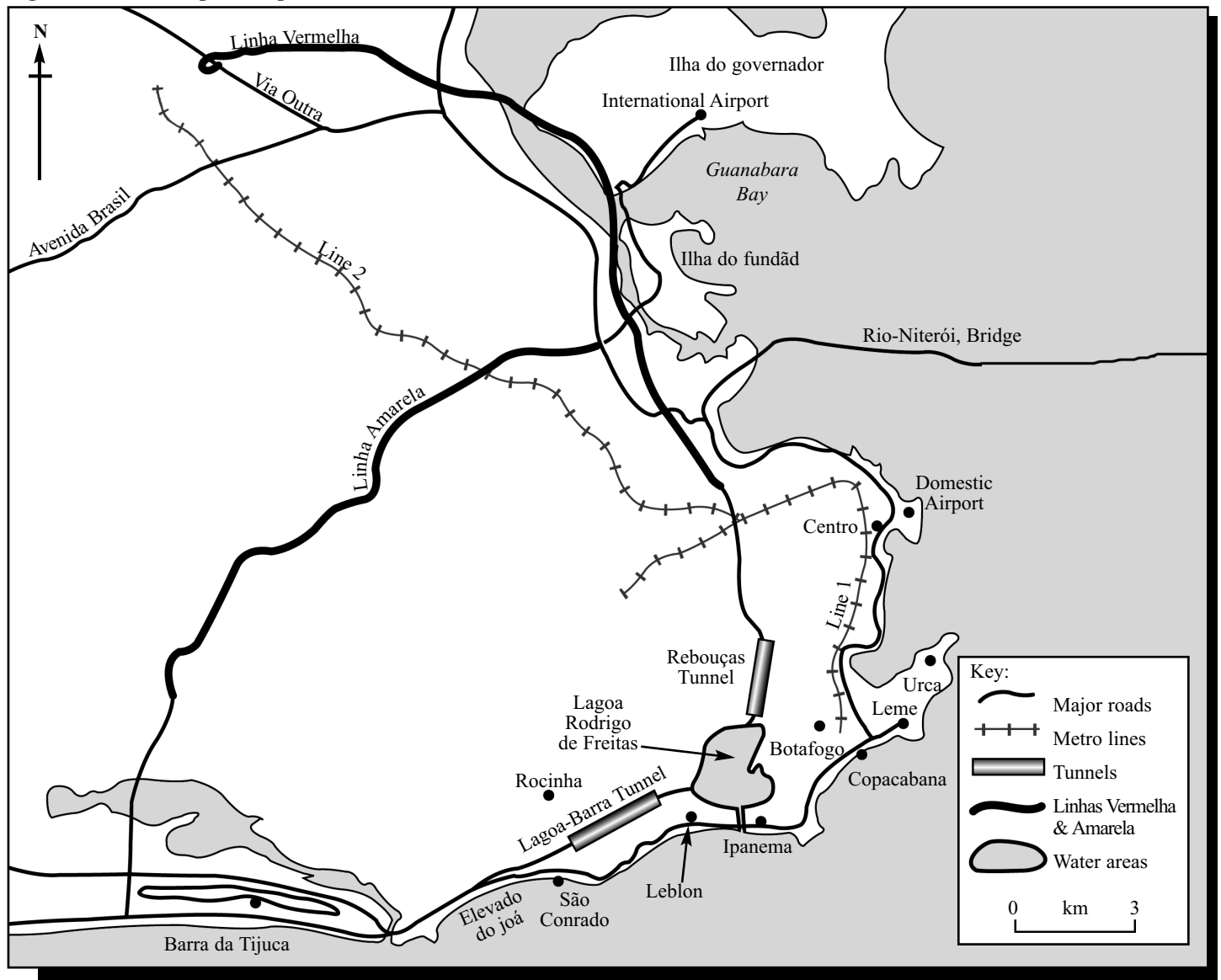


Fig. 3 Reference map for improvements



The Lagoa Rodrigo de Freitas is the lake inland from Ipanema and Leblon (Fig. 3). It is linked to the sea by a narrow channel which has to be dredged daily to stop longshore drift blocking it and to allow water to flow through the lake and out to sea. However the current flow rate through the lake is not fast enough to prevent the water from stagnating. This slow flow, along with the release of raw sewage, leads to algae blooms and eutrophication which resulted in the death of 132 tonnes of fish in February 2000, and a further 3 tonnes in February 2001.

Exam Hint: Fig 2 is an example of the sort of annotated sketch map you should learn to draw. Much of the information is contained in the text, but it is more effectively used and located on a sketch map.

The Solutions

1. Housing

Areas of spontaneous housing in Rio used to be bulldozed regularly and without warning. However the authorities were unable to offer enough alternative housing with the result that the favelas grew again. The authorities have now allowed the areas to become permanent.

The **Favela Bairro Project** (Favela Neighbourhood Project) began in Rio in 1994. It aimed to recognise the favelas as neighbourhoods of the city in their own right and to provide the inhabitants with essential services. Approximately 120 medium-sized favelas (those with 500 - 2500 households) were chosen. The primary phase of the project addressed the built environment, aiming to provide:

- paved and formally named roads,
- water supply pipes and sewage/drainage systems,
- creches, leisure facilities and sports areas,
- relocation for families who were currently living in high risk areas, such as areas subject to frequent landslides,
- channelled rivers to stop them changing course.

The second phase of the project aimed to bring the favela dwellers into the mainstream society and keep them out of crime. This is being done by:

- generating employment, for example by creating co-operatives of dressmakers, cleaners, construction workers, and helping them to get established in the labour market,
- improving education and providing relevant courses such as ICT,
- giving residents access to credit so that they can buy construction materials and improve their homes.

The Favela Bairro project was funded jointly by the Inter-American Development Bank (IADB), who loaned US\$600 million, and the Municipal Authority who gave US\$ 240 million. The project has been recognised as a model of its type, winning the Habitat Prize from the United Nations, amongst other prizes. The project is now being used as a basis from which to plan and implement further projects both in Rio and throughout Brazil. One example is the **Favela Urbanisation Programme** which aims to provide essential services to areas that did not benefit from Favela Bairro, and has begun in Rio, São Paulo and Salvador.

The government is also helping people to become **homeowners**. The Brazilian Federal Savings Bank offers 100% mortgages to families to allow them to buy a house over 15-20 years. The house can either be one that the family is already renting, or it can be a new or renovated house. The government are currently involved in building and renovating homes which will be within the price range of families who earn between 3 and 20 times the minimum salary (which is approximately US\$80 per month), and who can demonstrate that they have a regular income.

The mountainous relief of Rio, and its rapid increase in population has led to a huge demand for building space which could not be satisfied within the traditional limits of the city. To solve this problem, development has spread outwards and led to the development of a new area of the city called **Barra da Tijuca** (Fig 3). Barra began to develop in the 1970s after a link road, the Elevado do Joá, was built which clings to the cliff face between São Conrado and Barra. Today it is almost a city in its own right with its own shops, health services, schools and offices; however, many people who live there commute into the centre of Rio to work, so it can not be considered entirely self-sufficient. It expanded from an initial 2500 inhabitants in 1960 to over 100 000 (1995), with the 1980s being the fastest period of growth. Barra is an example of decentralisation but especially of rich or middle class people. It contrasts with the more inland area of Jacarepagua which contains local authority low class housing, which it is separated from by fences, guard dogs and high security. This **segregation** of rich and poor is very characteristic of Rio.

2. Education

A number of developments have taken place recently to try and improve the quality of the education system. Four of these developments are explained in *Table 1* below:

Table 1 Educational developments in Rio/Brazil

Educational Development	How it works
1. Amigos da Escola (school friends)	<ul style="list-style-type: none"> • Aims to encourage people from the community to volunteer their skills to improve opportunities offered by their local schools. Examples of help being given: <ul style="list-style-type: none"> * developing pupils' reading, * supporting teachers in the classroom, * providing extra-curricular activities such as learning a new language or a musical instrument, * helping in the upkeep of the school such as painting classrooms. • Amigos da Escola is advertised on television, and through flyers and a website giving advice about how to get involved.
2. Bolsa Escola (school grants)	<ul style="list-style-type: none"> • Launched in April 2001, Bolsa Escola gives monthly financial incentives for low-income families to keep their children at school. • Ministry of Education has US\$ 900 million to use in 2001. • Programme will reach 10.7 million children aged between 6 and 15 (5.9 million families) across Brazil. • Each family will receive US\$8 per month/child registered in school, up to a maximum of 3 children or US\$24/month.
3. Rumo Certo Project - Vila Olímpica da Rocinha (the olympic village in Rocinha)	<ul style="list-style-type: none"> • Provides an example of the extra-curricular activities being provided for children. • Project received a US\$184 000 grant from Furnas, a Brazilian power generation and transmission company, which will pay the site lease for the next five years. • Project allows 1000 children aged between 6 and 17 to participate free in lessons of volleyball, football, swimming and squash. • Future aim is to have teams that will compete, and to reinforce work done in schools by providing ICT and English courses.
4. Universidade Estácio de Sá (Private University)	<ul style="list-style-type: none"> • First university campus to be located in a favela, opened in February 2001 in association with the Rumo Certo Project. • Aims to provide 400 higher education places for people from Rocinha. • Cost of courses is 60% lower than the same course outside the favela, being between US\$50 and US\$100 per month.

Case study: The success of housing and education improvements in Rocinha

Rocinha, which is one of the largest favelas in South America, is located on a hillside overlooking São Conrado, one of the wealthy neighbourhoods of Rio (Fig. 3). Rocinha was recognised as an official neighbourhood of Rio in 1992, and has approximately 200 000 inhabitants.

Many changes have taken during the 50 years of its existence. Over 90% of the buildings in Rocinha are now constructed from brick and have electricity, running water and sewage systems. Although the houses are very small, household appliances such as fridges are the norm rather than the exception. Rocinha has its own newspapers and radio station, and its own economy is developing rapidly. There are food and clothes shops, video rental shops, bars, a travel agent and even a Macdonalds. Schools, health facilities and, as explained above, a private university can all be found within Rocinha.

Many of these improvements and developments are the result of Rocinha's location close to wealthy areas such as Ipanema, São Conrado and Copacabana. Many of the residents work in these wealthy areas that surround Rocinha, and although monthly incomes are low, they are not as low as elsewhere in the city and in Brazil. These regular incomes have allowed improvements to be carried out by the residents themselves as well as those being carried out by the authorities, with the result that favelas like Rocinha are constantly changing and improving.

There are other areas in Rio where people who have just arrived in the city have started to build temporary housing; here the houses are made out of whatever the people can get hold of and they usually don't have any facilities like running water and electricity. It would therefore be incorrect to think of the favelas in Rio all having the same level of development and the residents having the same quality of life.

Exam Hint: Many favelas in Rio have developed through time and no longer consist of temporary housing with few facilities. It is important that you show you are aware of these temporal changes and the resulting differences between recent and well-developed favelas.

3. Transport

Rio's roads have become very congested as a result of increased car ownership. The solutions that have been put in place encompass both public and private transport solutions. The solutions are shown on Fig 3. The public transport solutions should have the eventual effect of reducing the problem of photochemical smog in Rio.

An efficient **bus service**, which covers all areas of the city, has been developed and the prices are within reach of most people, being US\$0.50 for each journey made. Alongside the organised bus services, vans operate along the most popular routes and charge the same price. These are not legal, and it is argued that they are causing more congestion by being on the roads and clogging up the bus stops. The bus companies and government are currently running a campaign to try and get passengers to boycott the vans.

Exam Hint: Examiners like to see students using sketch maps to illustrate the points they are making. A quick sketch map to illustrate transport improvements in Rio could save you explaining so much in written form and leave more time for the rest of your essay.

A **Metro system** has been built and is currently being expanded. A one way ticket costs US\$0.66. There are **two** Metro lines:

- **Line One:** runs from Botafogo into the centre in 26 minutes, with trains every 4 - 5 minutes. An extension is due to open in July 2002 and there are plans to extend this line into Ipanema.
- **Line Two:** runs from the west of Rio into the centre in 34 minutes, with trains every 4 - 7 minutes.

Currently the Metro does not provide an alternative mode of transport for much of the population, as its coverage is not extensive enough. However there are plans to add two new privately financed lines; one would run across the city from Barra to the international airport, while the other would link Rio with Niterói on the other side of Guanabara Bay. If these lines are built the Metro could significantly reduce traffic congestion on Rio's roads.

The completion of the road, **Elevado do Joá**, to Barra in May 1970 and the resultant development of this area led to a huge flow of people commuting from Barra to Central Rio to work. The new road and the main coastal link roads into Central Rio now operate as a one way system during the rush hour times of 6.30-10.00 and 18.00-20.00 which has helped to mitigate the problem.

The **Linha Vermelha** and the **Linha Amarela** are two major roads that have been built to try and ease traffic congestion. They are urban motorways that provide alternative routes for people travelling long distances within the city. The Linha Vermelha was completed in 1992 and provides a new link from the southern coastal built-up area (Lagoa, Ipanema, Leblon etc) out to the international airport and beyond. The 22km long Linha Amarela was completed at the end of 1997 at a cost of US\$324 million. It was partly funded by a private company who now control the pay booths, and is the principal link from Barra to the international airport. Estimates suggest that the road has cut people's journey time by 45 minutes and that traffic flow through the Rebouças tunnel by 12%. However there are indications that the number of private cars on the road has increased since these roads were built, which will reduce the long-term impact they have on traffic congestion.

4. Water pollution.

Much work has already taken place in Rio to improve the sewage systems. The Governor of the State of Rio is also committed to improving the collection and final destination of solid waste and looking after/monitoring the environment. Much of the work currently being done is being funded by loans from the IADB and the Japan Bank (formally the Overseas Economic Cooperation Fund). It is hoped that now the amount of sewage being released into Guanabara Bay has been significantly reduced, the marine life will start to return.

Improving the sewage systems will also help revive the Lagoa Rodrigo de Freitas. 4 km of new sewage pipes are currently being installed around the lake, linking all the areas where raw sewage previously entered it, and the sewage will now be taken away to be processed. The rivers and channels that feed water into the lake are also being dredged to improve the flow and renewal of water. This work is costing US\$2 million.

Conclusion

It is clear that solutions are being implemented to overcome Rio's urban problems. For example, in favelas where work has been done to improve the infrastructure and to integrate the favela dwellers into the rest of the city, improvements in quality of life are apparent.

The formal recognition of the urban poor has been one of the most important developments of the last decade. Alongside this recognition of the urban poor, the loans and funding that have come from outside Brazil enabled many projects to go ahead. However the study carried out by the UNDP in 2000 shows that, while quality of life may be improving for many, a huge gap between the richest and the poorest still exists.

Fig 4 Per capita income above \$46 per month by district, metropolitan region of Rio de Janeiro, 1990.

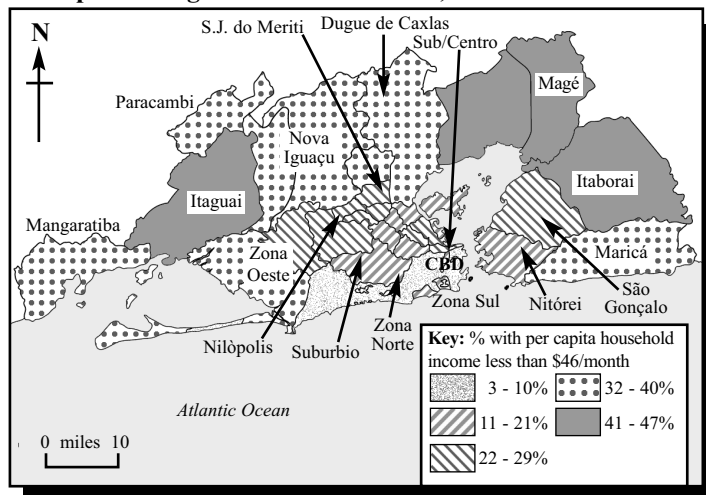


Fig 5 Illiteracy by district, metropolitan region of Rio de Janeiro, 1990.

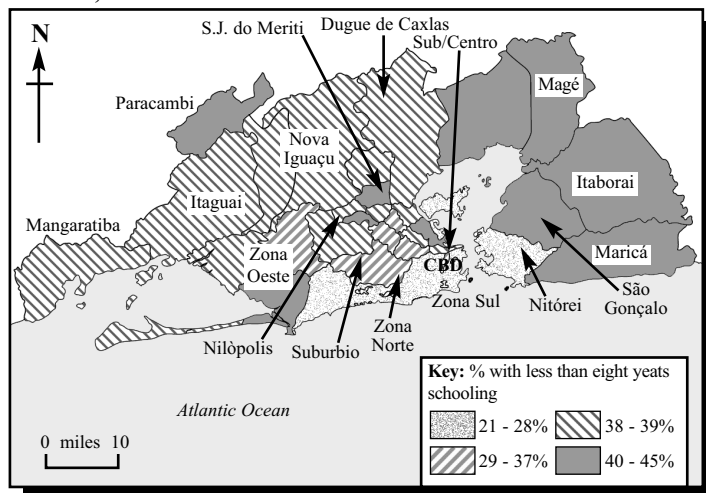
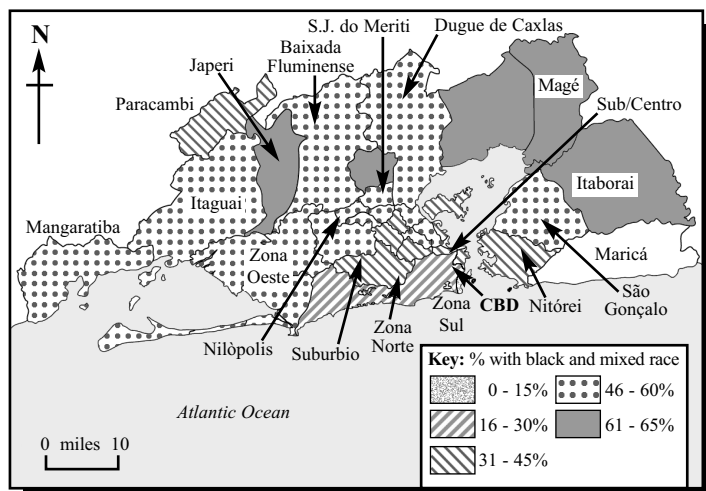


Fig 6 Black and mixed race population by district, metropolitan region of Rio de Janeiro, 1990.



Generic source: Rio planning literature

Exam questions:

- Analyse and suggest reasons for the distributions shown in Figs 4, 5 and 6. 12 marks
- Outline some of the strategies available to improve the lives of the urban poor in Rio. 8 marks

Exam Hint: Always use place names if possible.

Answers

- Fig. 4:** Essentially poorest areas 42% - 47%. Below \$46 a month, e.g. Magé, are found on outskirts. Newly arrived immigrants living in favelas. Richest areas found centrally and coastally (Zona Sul). Central part elite, high wage earners, established houses and jobs.

Fig. 5: Poverty is closely linked to years of schooling, especially in Eastern outer areas, although there are scattered pockets in central areas (presumably shanty town districts). In informal settlements there is rarely sufficient money for children to go to school for more than basics.

Fig. 6: Districts of greatest mixed race and blacks concentrated on Eastern area (possible in-migration) and also in Japeri and Baixada, neither of which are especially poor. May be elements of ghettoisation i.e. joining other black groups.

- Can be straightforwardly answered using the resource. Essentially:
 - housing
 - education
 - infrastructure
 - environmental improvements
 - the provision of employment.

Further research

BBC Geography Programme - *Brazil 2000*.
 Case Study 'Changing settlements' G. Nagle, Nelson
 Chapter 5 in 'Globalising Cities' P. Marcuse, Blackwell

Useful websites

<http://www.brazzil.com/p23apr00.htm>
<http://www.ipanema.com/welcome.htm>

Acknowledgements:

This Factsheet was written and researched by Nicky Wheeler who lives in Rio de Janeiro.

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