Land use in Rio de Janeiro

The objective of this exercise is to use Google Earth to examine the nature of the site and situation of Rio de Janeiro and to try to understand the nature of one of the world’s mega cities (a city with a population over ten million) and to help to explain its character and the way land is used.

A brief History of Rio de Janeiro

First recognised by the Portuguese (who colonised what was to become Brazil) because along an extremely hilly coastline with a steep scarp facing South east, it provided one of the world’s finest natural harbours in Guanabara Bay. The earliest sailors in 1565 had come to the area seeking fresh supplies of water and the name reflects the literal Portuguese translation of rivers of January. It quickly developed as a trading base and by 1763 it had replaced Salvador as the capital city – a position it held until 1960 when a new purpose built capital was established at Brasilia in an attempt to persuade Brazilians that their future lay in the interior of the country as well as along the narrow coastal strip where most of the population lived.

It still remains one of South Americas’ greatest cities and is a leading industrial and trading centre as well as one of the world’s great tourist destinations, boasting world heritage status and hosting the annual world famous carnival.

Task 1 Interpretation of the physical or natural landscape

Examine the Physical map of the site of Rio de Janeiro and use clues to describe the nature of the land. How high are the hills (how do they compare with hills in this country or in your local area: Remember these hills are in the middle of towns – how will they affect transport.

Describe the rivers (remember the original attraction of the area) but also note that the rivers are marked as they exist now and not as they would have been in the 1600s. Many of the courses have now been straightened or been diverted underground (why do you think this might be?) Note the rivers flowing into the North East part of Guanabara bay which retain their natural courses. What term is used to describe this pattern of river flow and what does it tell you about the nature of the land?

Task 2 Settling in the area in the 1600s

What would be the most attractive areas for settlers in the early years of building a settlement? There were few local natives in the surrounding area so you have a completely free choice of land. Remember the area is in the tropics so likely to be hot and humid with plentiful rainfall with vegetation which reflects this (so although the land is available the cost of clearing it might be high unless you can afford slaves, who were being brought into Brazil from Africa at this time. Also the Portuguese King at the time was in the habit of donating land in Brazil to loyal subjects in return for favours rendered – these were referred to as Donatarios. As a result the whole region was in theory likely to belong to a landlord who might or might not want compensation.

a) Where would be your first choice location and why (consider the distances involved, your priorities and the historical circumstances prevailing in the late 1600s. Horse and cart and boats were the only form of transport for heavy goods. What buildings and functions would the citizens need in the embryonic settlement of Rio de Janeiro. Think in terms of water supply, food, building materials, waste products, jobs that need doing. It is important to remember that such a settlement would largely need to be self sufficient.

geography.org.uk
b) Would it need defending? If so against who and how? Remember that early on Rio was on the other side of the world – at least six months journey at the time.

c) What was happening in England at this time in history?

Task 3 Present day land use

Use Google Earth to examine the present day Land Uses in Rio de Janeiro.

If you have Google Earth on your PC simply click on the Kml file and Google Earth will open. Alternatively you will need to copy the file RIO DE JANEIRO and paste it into your computer (it usually sits in C:Users\YourName\RIO DE JANEIRO). Next ensure that you have downloaded the latest version of GoogleEarth – it is free and it is brilliant onto your computer. Once that is loaded open the file as before and GE will open.

Recommendations when using Google Earth for this exercise:

File should automatically appear here! Categories can be switched on or off as a group or separately. By double left clicking on a land use the programme zooms into the area. To zoom in or out use the mouse wheel or the scale slider.

Turn photos on or off here by ticking the box! Scale is shown here! Latitude and longitude are Altitude of view is indicated here!
Click Tools Options on the drop down menu and the options panel appears

For vertical exaggeration I put 3 for maximum affect – you might want to experiment.

As with most applications there is a trade off between quality and speed.

At the moment there are 4 categories:

a) Examples of 10 land use features
b) Tourism
c) Favelas
d) Town centre

a) Complete the accompanying table (link to table: geography.org.uk/download/GA_WC14 Rio Land Use table task.doc)

In the Google Earth key are ten land uses (numbered one to ten). Before you start try to anticipate (in column 3) what criteria you might expect to be a requirement for each land use. (Things like proximity to a river or road, availability of flat land, nearness to people/other land uses etc.). You should be able to back up your ideas with explanations.

Identify them by clicking on them one at a time, zooming into the aerial land use view and matching them up with their correct descriptions. It does not matter which order you tackle them in. If you need a clearer view either unclick the box or right click the mouse on the land use, click properties on the panel that appears, then click style, colour and reduce the opacity. Features on the ground should enable you to match up the features. (If pupils are really struggling they can turn on the photos option under layers and click on a photo within the area, alternatively they can alternate to street view to get a ground level view).

b) The Tourist Industry

What do the main tourist zones have in common?

List as many attractions to visiting Rio as you can think of – use the internet to help you!

Design a poster the authorities in Rio could use to attract even more visitors.

gEOGRAPHY.ORG.UK
Are there any problems tourists might need to worry about? What could the authorities do to address these issues? Are there any other sites you would be attracted to in Brazil and how would you get to them?

Where would you choose to stay if you were able to go to the world cup? Use the internet to check out places to stay. Explain your answers.

(i) If money were no object?

(ii) If you needed to be sensible?

c) The Favelas

Look in detail at the Favelas (also known as slums, shanty towns, barriadas etc.. in different parts of the world). Try to characterise the main features. Use Google Earth but also refer to news articles or the internet to find out what is happening to these places. Look at building materials, (the roof colours gives a strong clue on Google Earth) but it is possible to use the person icon to take a walk along some typical streets in Rio. How tall are the buildings, what are the roads like, how much space do they have? What problems might people in these areas face. If you are able to get into Google Street mode look at the people on the streets, can you make deductions about them from what they wear or what they are doing. Throughout this exercise be careful not to make negative assumptions about these people, many work hard and are highly skilled at what they do, also the houses they live in are not always the most basic, they can be quite substantial and even small houses can be surprisingly expensive to buy if they are in the more desirable areas. Look for signs indicating the type of amenities that people have access to. Look for signs of electricity, TV aerials or satellite dishes, signs of running water (without which there can be no effective sewage disposal), individual, rather than communal toilets, rubbish collection etc.. Without these things there will be health hazards. Look out for graffiti signs of rubbish on the streets and other negative aspects; what about positive aspects such open spaces and play areas, community focused initiatives and locally advertised activities. How do people get about what types of transport (public or private are available) what is the condition of the vehicles?

Look at the size and locations of these settlement areas, are they all similar, why do you think they might be where they are? Where, if at all will the inhabitants work? What sort of jobs would you expect them to do? If they cannot work, how might they manage to survive? What other land uses are these areas often found close to, can you explain your answer?

What can be done by the city authorities and/or the government? There is a difficult balance to be maintained here - if too much assistance is given then more migrants will be attracted in from the countryside whereas if not enough is done to help these people then the weakest members of society will fail (the old, the young and the frail). It does not have to be a great deal in the way of assistance, for example if building materials are provided, the people will provide the skilled labour. If planners want to influence the layouts of streets to avoid overcrowding and lack of access, the planning of water supply or sewage access points laid out in straight rows and at regular intervals is all that is needed to ensure the desired outcome.
d) The CBD

Use your geographical knowledge to identify the location of the Central Business District and also the main shopping area in Rio de Janeiro. Is it where you expected? How does it’s location relate to the place you originally chose in Task 2 near the start of the exercise. Most city centres are on or very close to the site of the original settlement. Is the CBD accessible from all parts of the city? Which areas are most likely to require newer “Out of Town shopping zones” and why?

Task 4: A Virtual tour

Visit at least three different locations in Street view (this can be accessed in either Google Earth or Google maps by simply picking up the person icon, who will hover over the map while streets appear in blue, the person can then be dropped at an appropriate location and walk along these streets in any direction – but may not walk off the main streets through walls). Make comparative notes to explain reasons for the differences you note. It is not easy to get into the heart of favelas because of the lack of roads but they often can be viewed from the edge of the area. In the case of the larger areas such as Rocinha, it is possible to take a virtual stroll along the main roads.

Additional Task:

Try to research some of the issues facing Rio such as bad publicity over crime, what has been done to tackle the horrendous traffic problems in the last thirty years as the city has grown. How has the threat posed by landslides on very steep hillsides been tackled and how have the authorities responded to the pressures brought about by the upcoming FIFA World Cup and the Olympic Games, both due to be hosted in Rio de Janeiro. For each of these try to analyse the nature of the problem and then attempt to suggest a solution to the issues raised.