

## Climatic region of Brazil| sample answer

**Q. 'A region can be defined by its climate'. Discuss this statement with reference to one sub continental/continental country you have studied. (has not been asked yet)**

Brazil has an equatorial climate in the majority of the region. because it is quite vast we can also see regions of Savanna climate in Southern/ Western Bahia.

The physical characteristics and climate are extremely important in Brazil's primary, secondary and tertiary economic activities

Brazil is made of high lands and low land and is also home to Amazon basin, the amazon basin contains the tropical rainforest with an equatorial climate and is found between latitude 23.5 degrees north and south of the equator. It is home to the greatest variety of living things (biodiversity) on the planet.

The tropical rainforest is an important part of the global climate system, It produces water vapour and absorbs carbon dioxide from the atmosphere. Tropical rainforests produces 30% of the world's fresh water through transpiration.

The climate of the biome is tropical/equatorial and heavily influenced by its location. Because it is located in the tropics , sunlight strikes the earth at roughly a 90 degree angle and therefore the region receives almost 12 hours of sunlight every day.

The average temperature is about 27°C . There is small temperature range. Day length hardly changes between summer and winter and intense heating occurs as a result.

Due to the intense heating large amounts of moisture evaporates from the ground and vegetation. Water vapour rises, cools and condenses to form heavy convectional rainfall. Annual rainfall is 1250mm to 6600 mm

Because of the amount of water and heat, humidity levels reach between 77% and 88%. This encourages growth. Though rainforests only cover about 6% of the earth's surface they contain over 50% of all plant and animal species.

Latosols are red/yellow coloured zonal soils associated with equatorial climate. Rapid, deep chemical weathering and leaching play an important role in the formation of it. The latosol is very poor in nutrients. Thousands of years of heavy rainfall have washed the nutrients away in the process of leaching. Nutrients, instead, are found in living plants and in the layer of decomposing plant matter on the ground (O-Horizon) 99% of the nutrients are held in root mats on the forest floor.

Leaching is so intense that only alluvium and iron compounds are left which give the soil its characteristic red and yellow colour. These soils lack silica and have low humus content due to rapid breakdown of organic material.

Various species of decomposers such as insects, bacteria and fungi quickly turn all dead plant matter into humus (humification). Plants quickly take up nutrients from the O-Horizon the moment they are released. This is so heavy rain does not wash away nutrients before they absorb them.

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Therefore, rainforests have a very short nutrient cycle, it takes a few days for dead organic matter to be converted into humus and absorbed by plants. All life in rainforest is based on decay.

When a rainforest is cut down, the nutrients are removed from the ecosystem and the remaining soil can only be used for a short time before becoming infertile.

Poor soil management such as deforestation, intense heating and heavy rainfall can lead to laterite soils developing.

Laterite is a hard brick-like soil impossible to cultivate, even when wet. It occurs when the iron and aluminium forms a hard pan and when topsoil is removed by erosion the hardpan is exposed and baked.

The rapid rate of deforestation and land clearance drastically impacts climate. The conventional rains depend on the trees to hold the water, without trees the local water cycle is disrupted and potential desertification could result.

Also population pressure has meant that the traditional slash and burn system of land clearance is not sustainable as the land has no time to recover. The land is also being cleared for coffee plantations.

In areas of the savanna climate, Soya has been genetically modified to grow in the hot arid conditions. These monoculture plantations threaten to invade and reduce natural habitats.