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Climate Profiles : Climate Brazil

Brazil Climate Change Profile
Part 3: Impact on Environment and Society

Like many large countries, Brazil could suffer from rising temperatures. The worst scenarios even anticipate a collapse of the Amazon rainforest ecosystem.

Iguazu Falls as it looked in July 2006, after a severe drought reduced South America's largest falls to a trickle. Global warming will likely cause more frequent droughts in many parts of Brazil (Photo: Reuters)

Drought

The severe drought that struck northeastern Brazil in Fall 2005 was the worst dry spell in the country in over a century, causing rivers to recede to record lows, water shortages, and devastating forest fires. The most recent UN Intergovernmental Panel on Climate Change (IPCC) assessment singled out the region as particularly susceptible to further such droughts if global warming continues. Declining river flows also affect Brazil's hydroelectric sector, which produces over 80 percent of the country's electricity.

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Threatened Forests, Wetlands, and Biodiversity

Drought and warming temperatures also threaten one of the most critical ecosystems on the planet - the Amazon rainforest. The Amazon region contains up to one third of the plant and animal species known to man. Its rainforests are essential to the carbon cycle that regulates the planet's oxygen and carbon dioxide. Scientists are now trying to determine the "tipping point" - the amount of global warming the rainforests can take before the ecosystems begin to collapse. Some researchers say that threshold could be passed in the next few years; others say it is decades away.

That is, of course, if the axes and bulldozers do not get to the

rainforests first. Over 18,000 square kilometers of rainforest was destroyed in 2004-05 to make way for cattle pastures, soybean farms, or other land use that is more economically profitable than untouched rainforest. Researchers have found that deforestation impacts rainfall and climate patterns in the region. Slashing and burning rainforests also releases massive amounts of carbon dioxide into the atmosphere, and represents up to 75 percent of Brazil's total greenhouse gas emissions.

Other threatened Brazilian ecosystems include the Pantanal wetlands, the world's largest freshwater wetland, and the Brazilian reefs, the only reefs on the South American coast. The fourth IPCC report (2007) also said that with a 1.7-degree Celsius increase, up to 45 percent of the plants in Brazil's Cerrado (central savannas) could become extinct by 2050.

Agriculture

Drought and steadily rising temperatures also threaten agriculture, a major sector of the Brazilian economy. One of the country's principal crops, soy, is particularly sensitive to extreme heat and dry weather which scientists expect will continue or worsen in the decades ahead. Brazil currently exports over 8 billion dollars worth of soy products each year. Researchers now say global warming could cut into annual soybean harvests by up to 60 percent. Other economically important crops, such as coffee and corn, would also suffer from a hotter climate. In the long term, none of Brazil's crops are expected to benefit from global warming.

Other Impacts

Brazil may also face more severe floods, such as those that swept through the country in 2004. Rising sea levels could make coastal areas such as commercial and tourism hub Macae, more prone to flooding.

Scientists have also begun to look at the potential impacts of global warming on Brazilian public health. Rising temperatures could expand the habitats of insects that carry diseases like malaria and dengue fever into the typically cooler southern parts of the country. Over 85,000 cases of dengue fever were reported in southwestern Brazil in early 2007, a 30-percent increase from the previous year.

Sources: WWF, Conservation International, SciDev.net, IPCC, Reuters, IPS Inter-Press Service, New York Times

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