

CITY CLIMATE LEADERSHIP AWARDS

Rio de Janeiro Climate Close-Up

Fast Facts

- With a GDP of \$2.3 trillion, Brazil is the world's seventh wealthiest economy. It is also the largest country in Latin America and the Caribbean in terms of both area and population.
- In 2012, the Brazilian government launched a range of initiatives to reduce energy costs, restructure oil royalty payments, strengthen investment in infrastructure through foreign participation, and reform the regional value added tax.
- Brazil's population is 190,732,694 people, with a density of 23 people per km².
- CO₂ (eq.) emissions were estimated to be 366 million tons, or 1.9 tons per capita, in 2009.
- Brazil has committed to reducing GHG emissions by about 36% and 39% compared to business as usual (BAU) by 2020.

Sources: World Bank, <http://data.worldbank.org/country/brazil>; United Nations, <http://data.un.org/CountryProfile.aspx?cr-Name=BRAZIL>; UNEP, <http://www.unep.org/publications/ebooks/bridgingemissionsgap/Portals/24168/Appendix2.pdf>. IBGE - Censo 2010

- Rio de Janeiro's GDP is \$93.1 billion.
- Rio de Janeiro's peak density of 48,300 people/km² is higher than London's (27,100 people/km²), but lower than Hong Kong's (111,100) and Bogotá's (55,800).
- The municipality of Rio de Janeiro produces 22.6 million tons of CO₂ equivalent per year.
- 72% of Brazil's total oil production (crude oil and natural gas) comes from the State of Rio de Janeiro. (Source: Data from 2013 <http://www.anp.gov.br/?dw=1024>)
- Despite the congestion, only 19% of residents of the metropolitan region of Rio use cars and motorcycles, with public transport (51%, including buses, metro and rail, and other systems) and walking (30%) constituting the majority of trips. Bus represents the largest portion of the modal share.
- The city has set a target of 20% reductions by 2020 compared with 2005 emissions.

Sources: http://www.rio.rj.gov.br/dlstatic/10112/1712030/4114527/CRJ_InventarioGEE2012_resumo_tecnicoINGLESFINAL1.pdf <http://download.rj.gov.br/documentos/10112/1694464/DLFE-64007.pdf>; CalibracaoModelodeTransporte.pdf

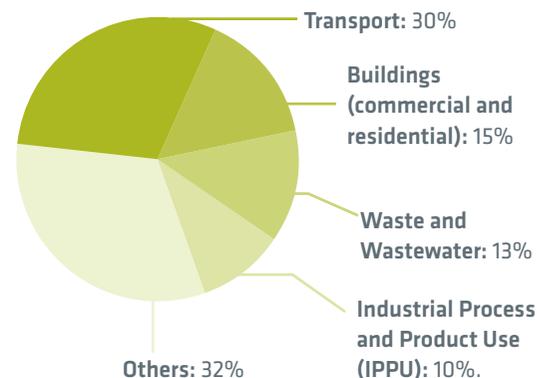
Population statistics



	2013	2020	2030
Municipality	6.3 million	6.5 million	6.7 million
State	16.0 million	16.5 million	17.2 million

Source: Prefeitura da Cidade do Rio de Janeiro, Projeção Populacional 2013-2020 para a Cidade do Rio de Janeiro: uma aplicação do método AiBi. Janeiro - 2013, http://portalgeo.rio.rj.gov.br/estudoscariocas/download/3255_Proje%C3%A7%C3%A3oPopulacional2013-2020_CidadedoRiodejaneiro_m%C3%A9todoAiBi.pdf

Sources of CO₂ (eq.) emissions



Source: http://www.rio.rj.gov.br/dlstatic/10112/1712030/4114527/CRJ_InventarioGEE2012_resumo_tecnicoINGLESFINAL1.pdf

CO₂ (eq.) emissions



Annual CO₂ (eq.) emissions:
11.4 million tons (2005)

Emissions reduction target: 20% reduction by 2020 (compared to 2005)

Sources: World Bank, <http://www.worldbank.org/en/news/feature/2012/06/18/rio-de-janeiro-to-fight-greenhouse-gas-emissions>; C40, <http://c40.com/c40cities/rio-de-janeiro>

Sustainable Communities winner 2013: Morar Carioca Program

Summary

Rio de Janeiro won the 2013 C40 & Siemens Climate Leadership Awards' Sustainable Communities category for the Morar Carioca Program – a comprehensive urban revitalization strategy, which will invest in projects throughout the city with the aim of formalizing all of the city's favelas by 2020. With 55 projects completed, this program is already having a direct impact on the environment, health and welfare of more than 200,000 Rio residents, and will ultimately impact more than 20% of Rio's population who currently live in informal settlements.

Challenges

Brazil's 2010 census estimated that 22% of Rio de Janeiro's population lives in informal settlements (favelas). The majority of these lack adequate sanitation or building standards leading to water pollution, soil degradation, methane emissions from waste, as well as a host of other social, health and safety issues for residents. The Morar Carioca Program, also called the Municipal Plan for the Integration of Informal Settlements, aims to provide integrated development and services through the Municipal Secretary of Housing in order to incorporate these areas into the more formal communities that they generally border.

Through holistic urban planning, rezoning, infrastructure upgrading, housing improvements, regulation of land tenure, city services extensions, and concentrated monitoring, this priority of the city government aims to formalize all of the city's favelas by 2020, improving living conditions for up to 232,000 households.

Actions

At Babilônia and Chapéu Mangueira, two favelas located at Leme (next to Copacabana), the focus of the project was to reduce carbon emissions while encouraging sustainable practices and approaches, such as LED outdoor lighting and selective waste collection. At Babilônia, the City of Rio built 16 "green houses" and paved the Ary Barroso Hill, which provides access to the communities, with a mix of asphalt and recycled car tires. So far, 68 favelas have been re-urbanized for a total investment of 2.1 billion real, providing direct benefits to more than 65,000 households. The aim is to keep people within their own communities, only relocating those currently occupying areas at high risk of landslides. Since 2009, nearly 20,000 families have been relocated. The goal is to resettle all those living under risky conditions by 2016.

Projected Outcomes

The project is set to benefit up to 232,000 households by 2020 through a partnership between municipal and federal governments, the Inter-American Development Bank, and the Brazilian Institute of Architects (Instituto de Arquitetos do Brasil, IAB-RJ). IAB-RJ has selected 40 companies through a public call for tender to develop the projects in the favelas. Successfully converting slums into formal housing is a difficult task, and urban development experts consider the public policy around this particular initiative to be one of the most challenging areas to get right. As such, Rio's efforts are genuinely trying to avoid past errors and forge a sustainable solution by integrating the favelas into the city.



In detail

Morar Carioca Verde

Morar Carioca Verde is a pilot program under the wider Morar Carioca initiative. As part of the “Green” Morar Carioca program, two newly urbanized favelas covering 3,500 inhabitants and 1,000 housing units were fitted or retrofitted with sustainable technology. Solar panels, rainwater re-use systems, 260 LED lighting units, and individual gas meters were among the installed innovations.

In addition to improving the sustainability of the communities’ infrastructure, the City streamlined waste management, improving garbage collection services to the communities and establishing recycling centers. Furthermore, the City added close to 3km of water networks, 1.6km of sewage networks, and 1.1km of drainage networks to the area. The pilot project also improved accessibility to the communities by paving 14km of roads and leveling particularly steep parts of the communities.

Importantly, Morar Carioca Verde not only focused on environmental sustainability, but also included measures aimed at health and economic development. For example, the City constructed a sports center and improved green spaces in the neighborhoods. It also developed two commercial centers and one cultural center within the favelas. Officials hope that these improvements, combined with the favelas’ proximity to Copacabana, a major tourist draw in Rio, will stimulate economic activity in the favelas related to tourism.

The Morar Carioca Verde pilot program has now concluded, but plans are to incorporate sustainable practices into the remaining re-urbanization projects in Rio.





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