

6. Piratininga waterfront park



Type: top-down (government initiative)

Region: southeast

State: Rio de Janeiro

Biome: Atlantic Rainforest

City of Niterói

Population: 511 786 (estimated in 2017 ⁸⁷)

Area: 5 134.74 km²

Elevation: 2 m

Coordinates: 22.947908 S / 43.075472 W

MHDI: 0.837 (2010) ⁸⁸

Context

Niterói is a city located in the Rio de Janeiro metropolitan region, about 20 km from the state capital. The city is divided by the forested and protected Tiririca Massif. The landscape goes from sea level to the highest peak of Elephant Rock at 412 m. The centre faces Guanabara Bay. A new tunnel has been built to enable rapid connection to the ocean region. This connection accelerates the urban expansion to the area where two ocean lagoons are located. The region has been developed as a resort for weekend houses and slums that occupied vulnerable areas. There are several social and ecological challenges, as in most Brazilian cities.

The Piratininga waterfront park project is an innovative experience in Brazilian city landscapes, with the ecological restoration of the watershed using NBS. The municipality is investing to enable adaptation to and mitigation of climate change and to become a reference in sustainability and resilience.

87. <https://cidades.ibge.gov.br/brasil/rj/niteroi/panorama>

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Challenges

The ocean lagoon of Piratininga has been neglected and the environment is degraded. There is direct sewage discharge in the surrounding rivers, contamination by diffuse pollution, and solid waste (from plastic bottles to furniture and electronics) that is discarded in the water catchments

that flow to the lowlands. There is a vegetated canal that collects the contaminated water before it reaches the lagoon, but the infected waters infiltrate and pollute the groundwater table and the riparian vegetation. The lagoon is the final destination of the watersheds Viração creek, Cafubá river, Arrozal river, Jacaré river and Santo Antônio creek, with a total area of 22 km².



Figure 50. Plan of the parks with wetlands to filter run-off before it reaches the lagoon and location of various uses and equipment.

Objectives

There was a competition for a new park and the winner is a project using NBS to address the challenges of the lagoon's restoration. The design of a multipurpose park aims to offer manifold ecosystem services, such as water quality, protection and enhancement of native biodiversity; to prevent floods and sedimentation and provide multiple active and passive recreation areas, as well as bike lanes to incentivise clean mobility.

The masterplan aims to:

- manage water quality, treat and depollute the lagoon through ecological restoration (phytoremediation) with built wetlands;
- manage solid waste;
- protect and enhance biodiversity to integrate an ecological nature park into the urban landscape;
- design and plan opportunities for ecotourism to incentivise socioeconomic development in a sustainable environment.

Actions

The project, with 685 107.70 m², proposes a water-sensitive design with phytoremediation components (built wetlands) that, applied at the watershed scale, prevent eutrophication in multifunctional green spaces.

Implementation

The executive project was delivered in July 2019. The implementation is still to be determined, without allocated funds to guarantee that it will be done.

The city started a programme to renaturalise the Jacaré river that is a tributary of the lagoon, and in the process the administration decided to extend the project to the entire lagoon to offer a better urban environment with a holistic vision. A public servant produced academic research proposing an ecological park to restore and protect the lagoon. In this process the city opened a competition to develop

Outcomes (expected)

- Conservation, enhancement and valorisation of the lagoon's natural heritage, which has a recognised landscape and ecological potential.
- Native biodiversity (local ecosystems) conservation and enhancement.
- Depollution and water quality improvement.
- Development of plural ecological niches for biodiversity habitats.
- Enhancement of the local identity, with a focus on ecotourism and traditional fishing.
- Development of sustainable urban infrastructure and architecture in the park.
- Incentivising the use of sustainable solutions with recycled materials, certified wood and renewable energy.
- Promoting universal accessibility in all spaces.

Stakeholder involvement

The city hired a consortium of five landscape and urban design studios to develop the project: Phytoresource, Village, Gesto, Embyá — Paisagens e Ecossistemas e Kaan.

a project design with funds from the Development Bank of Latin America and from the city. The process involved the residents' associations Amaf, Amjo, Amac, Amorbela, Puma and Amji.

The consortium Parque Orla Piratininga won the competition and is developing the design for the lagoon and part of the tributary watersheds.



Figure 51. View of Niterói's coastline: Museum of Contemporary Art.

Success factors

Successes and failures will depend upon the way the project is implemented, especially regarding the focus on sustainable economic development of the local communities. Also, the new common area, with plenty of accessible nature, aims to offer intensive social life, recreation and sports facilities and promote active, passive and healthy spaces in direct contact with nature. The educational and research facilities are targeted at creating stronger social ties that will maintain the park, with knowledge about biodiversity and ecosystem services. An important issue will be long-term political support and citizen engagement.

Lessons learnt

The Orla de Piratininga park is a pioneer project that focuses on NBS to address multiple ecological and social issues. So far it has had a successful paradigm change: from trying to control nature to learning how to live with nature in a tropical coastal city.

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