



POLICY BRIEF 09

# Connectivity for people and biodiversity

**Learning from the green infrastructure  
systems in the City of Bogotá**



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# CONEXUS

## Connectivity for people and biodiversity

### Learning from the green infrastructure systems in the City of Bogotá

This policy brief presents lessons for the integration of nature and green space systems in urban and territorial management instruments, based on the experience of the adoption of the Principal Ecological Structure (PES) in the city of Bogotá and the actions for its implementation.

#### Key Messages

- In Bogotá, the definition of the Principal Ecological Structure and its recognition by the Territorial Organisation Plan has been a crucial step for a nature-based urban and regional planning, supporting the objective of reconciling urban development with the conservation of ecological networks.
- Integrating social objectives into green corridors, such as clean mobility, is essential to ensure the durability of the actions, ensuring lasting and ongoing impact at the urban scale.
- It is essential to define the objectives of ecological connectivity strategies in conjunction with various stakeholders in order to minimise possible socio-environmental conflicts.
- Prior analysis and constant monitoring are needed to evaluate the negative and/or unintended consequences of corridor creation, either in ecological or social terms, and to establish response strategies. In this regard, it is important to evaluate potential consequences of corridors prior to implementation, such as a possible increase in the dispersal of unwanted species like invasive or antagonistic species (predators or diseases), or an increase in ecological traps.







Metropolitan Park. Jhon Bernal

## **Bogotá's green infrastructure system**

**Although biogeographic conditions are factors that influence the growth and development patterns of cities, they are often not considered in urban planning. To make this relationship explicit and orderly, two decades ago Bogotá's Land Use Plan (POT) recognized and incorporated biogeographic characteristics of the territory through the definition of the Main Ecological Structure (EEP). This is understood as the network of spaces and corridors that support and connect biodiversity and ecological processes in the territory in its different forms and intensities of human occupation, and provide environmental services for sustainable development.<sup>1</sup>**





Linear parks, Bogotá. Ana Carolina Santos

The EEP includes all the ecological, geomorphological, original and existing elements in the territory that maintain and sustain biodiversity, and was introduced with the intention of motivating urban planning around natural resources.<sup>2</sup> In this context, the district proposes the implementation of connectivity strategies between the different elements of the EEP and areas of environmental importance in the region, in alignment with other strategies presented in the current POT (2022–2035).

Tensions still persist between the development of grey infrastructure and the conservation of the green areas that are part of Bogotá's ecological networks. Furthermore, there is a lack of coordination between conservation strategies and the design of green infrastructure. The district administration proposes to take various actions to develop or improve ecological connectivity in the city, including five Ecosystemic Corridors (19,898 hectares). These corridors will undertake, among other actions, restoration, tree plantings, gardening, green roofs, urban orchards, citizen science (participatory monitoring and recognition of biodiversity), private property conservation agreements, and environmental education. While these corridors do not constitute protected areas, they complement the city's Main Ecological Structure.

In addition, the district administration proposes the inclusion of “Sustainable Landscapes” as a new category of land management, which seeks to maintain ecosystemic functionality and connectivity in the context of productive activities, mainly in rural and peri-urban landscapes. A relevant action related to the construction of these sustainable landscapes is the establishment of conservation agreements with private landowners, schools and universities in different areas of the city, which together cover more than 158 hectares. These agreements seek to ensure that strategies for protecting ecosystems and improving ecological connectivity do not exclude productive activities associated with agricultural production and the provision of services. In addition to the other strategies, generating alliances with private landowners contributes to maintaining natural soil conditions, increasing habitats for fauna and flora species, and providing ecosystem services in different areas of the city.

The concept of urban forests has also begun to be incorporated into the actions proposed by the mayor’s office. Such forests could help develop or improve ecological connectivity and the functionality of ecosystems, in addition to complementing the EEP and mitigating the heat island effect in the city. This approach is not limited to protected areas and can be implemented in parks, private clubs, schools, residential complexes, etc.



**The definition of the Principal Ecological Structure has allowed the recognition of the set of biotic and abiotic elements that support the essential ecological processes of the territory. Through the strategies presented, Bogotá seeks to complement and further support the areas indicated in EPP, by providing alternatives for the integration of sustainable and productive landscapes and fostering the consideration of biodiversity criteria in the design of gray infrastructure.**



In addition, partnerships between different actors are considered necessary for the effective monitoring of these actions, including the identification of conflicts associated, e.g., regarding trampling, habitat degradation, damage to ecosystems, etc.



Transition zone between wetland and forest. Diana Ruiz

The city of Bogotá has various management tools that have enabled it to advance its biodiversity conservation and ecological connectivity objectives. Among them are the definition of a Main Ecological Structure, associated with the management of urban protected areas and other figures such as ecoparks. Based on their experience, it is clear that it is essential to align these strategies with social and urban development objectives to strengthen connectivity in the territory across scales. The ecological corridors approach recently proposed in the city's Land Use Plan can contribute to this, as long as planners consider the interests of different stakeholders, innovative design solutions, and effective monitoring. It remains essential to identify possible undesirable socio-environmental impacts or conflicts.



## Policy Recommendations

- **Encourage the creation and expansion of ecological corridors** that improve connectivity between natural areas, facilitating the movement of species and the flow of ecological processes. This may include the ecological restoration of degraded areas, the development of green infrastructure such as green roofs and green walls, and the implementation of urban gardens and orchards.
- **Establish partnerships with private landowners, local communities, educational institutions, and non-governmental organisations** to promote the conservation and sustainable use of landscapes in both urban and peri-urban areas. This could be done through conservation incentives, environmental education programs, and the implementation of sustainable land and natural resource management practices.
- **Train and sensitise architects, urban planners, developers and public officials** on the importance of biodiversity and ecological connectivity in urban design and territorial planning, promoting best practices and innovative solutions for the integration of sustainable and productive landscapes.

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 867564