

PLANNING ROOTED IN BIODIVERSITY

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Participatory territorial
management in high
mountain cities

COMMITMENTS

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The mountain ecosystem of Chile's central Mediterranean region offers its inhabitants multiple ecological benefits, but it is currently facing accelerated deterioration. The GEF¹ Mountain project designed a participatory portfolio of management, governance, and monitoring strategies to protect its ecosystems and native biodiversity in response to this problem.

Along the mountains of the Andes and the mountain ranges of the Chilean coast, a vast territory of 1.3 mil-

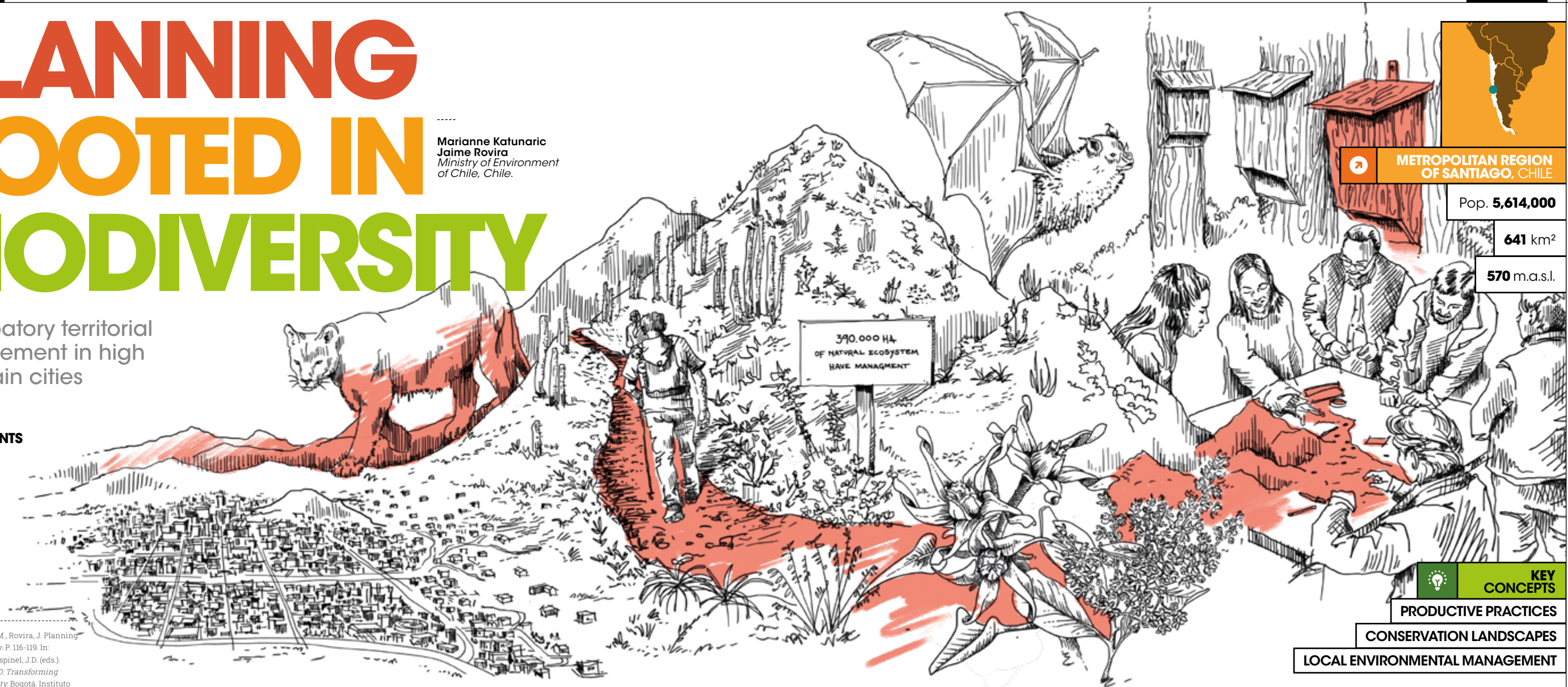
lion hectares is home to more than seven million people. They are distributed mainly between the capital city of Chile and a network of small and medium-sized peripheral towns that are part of the Metropolitan Region of Santiago de Chile. This growing network of urban settlements has brought adverse environmental effects to the region, such as air, water, and soil pollution, the loss of natural ecosystems due to changes in land use in favor of urban expansion, the proliferation of invasive species in wild environments, and the overexploitation of natural resources. These pressures are compounded by more than a decade of extreme drought in this mountainous

environment, resulting from the harsh and accelerated impacts of climate change.

All of the above factors have led to a significant loss and transformation of the biodiversity of the central Mediterranean region of Chile and its ecosystem services. This complex scenario was the starting point for an initiative that aimed to protect and improve the condition of biodiversity in this region. This initiative was called the GEF Project. "Protecting Biodiversity and Multiple Ecosystem Services in Mountain Biological Corridors of the Mediterranean Ecosystem of Chile". This project, with influence in urban and rural areas of 36 municipalities in the region, worked towards:

- › Strengthening the conservation management capacities of these territories.
- › Improving the State's effective promotion mechanisms to incorporate biodiversity protection into subsidized actions.
- › Establishing a permanent system of biodiversity information and monitoring for the region.

To achieve all of the above, GEF Montaña implemented four strategies described below. These strategies seek to create a sustainable territorial intervention model, where conservation and production coexist thanks to a series of good practices.²



METROPOLITAN REGION
OF SANTIAGO, CHILE

Pop. 5,614,000

641 km²

570 m.a.s.l.



KEY
CONCEPTS

PRODUCTIVE PRACTICES

CONSERVATION LANDSCAPES

LOCAL ENVIRONMENTAL MANAGEMENT

STRATEGY 1. ECOLOGICAL LANDSCAPE PLANNING OR ECO-LOCAL PLAN

The municipalities in the study area demanded instruments capable of dealing with environmental problems that threatened the ecological integrity of the territory (destruction and contamination of urban wetlands and their edges; substitution of natural habitats on the cities' outskirts, etc.). In response, the GEF Mountain project designed an ecological planning tool at a local scale, known as the Eco-Local Plan.

The latter allowed:

- › Providing updated information on the state of biodiversity to strategic development projects and plans.
- › Resolving the atomized administration of the 36 municipalities within the project area, which resulted in 36 different kinds of territorial management.
- › Identifying networks of interconnected territories of relevance to maintain critical ecosystem processes.
- › Creating **conservation landscapes** such as the *Peñalolén foothills* and the *Peñalolén Municipal Nature Reserve*.

IN FIGURES:

- More than 20 municipalities are working on different types of biodiversity conservation initiatives.
- 15 of the municipalities in the project area have biodiversity protection projects designed by their officials and financed by GEF Montaña.
- 100% of the project area has been assessed for its environmental components and ecosystem services of water supply, air purification, and carbon storage.

STRATEGY 2. MUNICIPAL CAPACITY BUILDING

GEF Montaña's second strategy included training exercises for public officials. These training initiatives included specialized courses, peer-to-peer learning internships, and two diploma courses at the University of Chile on **local environmental management**, land-use planning, and environmental project development and monitoring, among other topics.

Technical and technical-divulgative products have also been created to guide the actions of municipalities, private associations, N.G.O.s, and civil society organizations, among which the following are worth mentioning:

- › Report on the state of biodiversity and ecosystem services for 2020.
- › Manual of good municipal practices for biodiversity management.
- › Floristic and plant survey in the GEF project area.
- › Guidelines for the management of bat colonies in constructions.

IN FIGURES:

- To date, 30 of 36 municipalities in the project area have officials trained in biodiversity protection strategies.

STRATEGY 3. INCENTIVES FOR GOOD PRODUCTION PRACTICES

In this regard, the restoration management of *the sclerophyllous* forest on 15,000 hectares of land in the project area stands out, as the implementation of management plans with forest management criteria and restoration objectives was tested using financing from an existing law that had not been used until now. Thus, the owners of the native forest were in a position to carry out sustainable forest management.

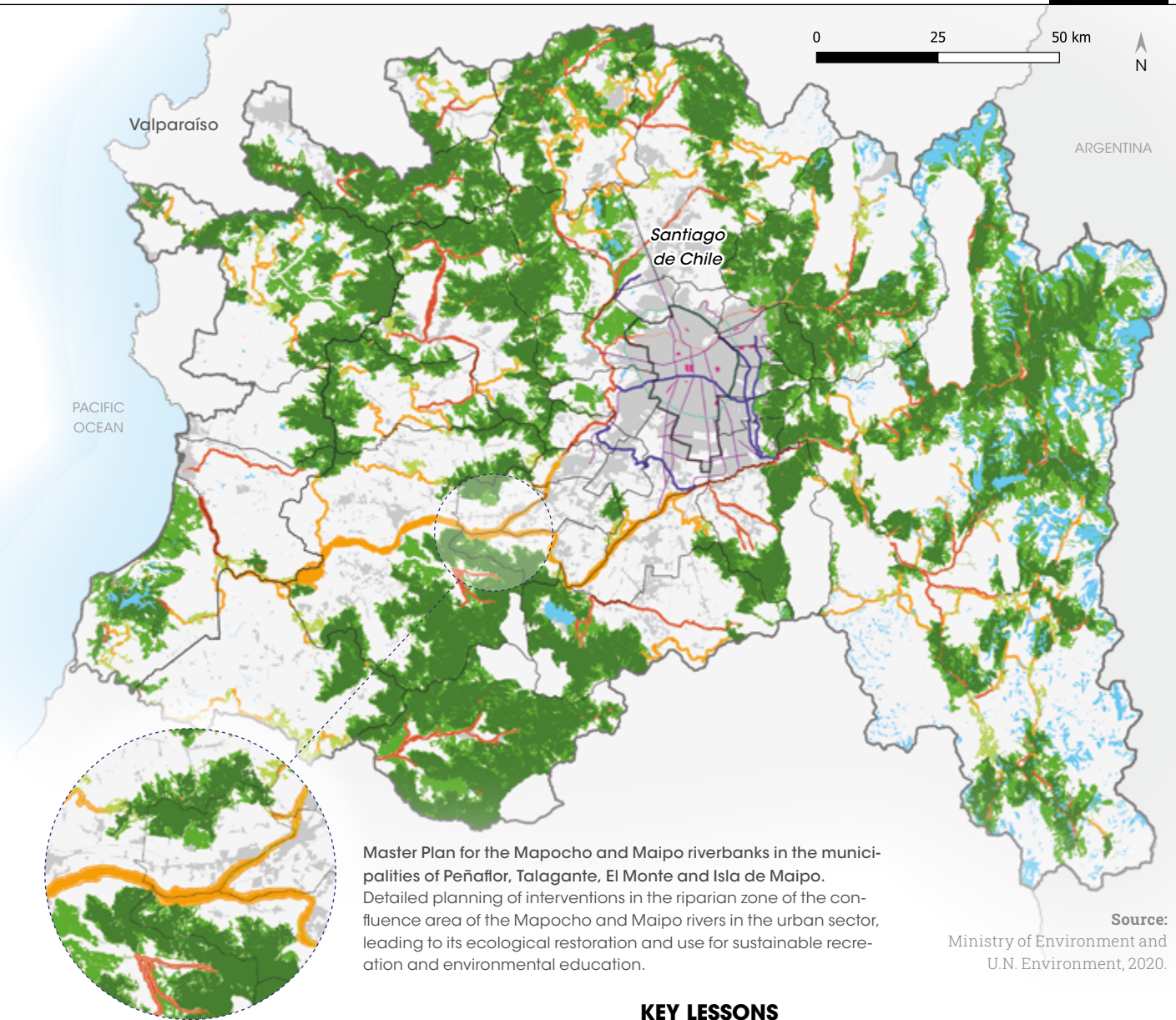
IN FIGURES:

- 390,000 hectares of natural ecosystems have sustainable soil and forest management plans in wilderness areas.
- 15,000 hectares of sclerophyllous forest are being restored.

STRATEGY 4. INFORMATION AND MONITORING

An additional product of the GEF Mountain project was the regional *Simbio* module, an information monitoring system that evaluates the region's Mediterranean ecosystems under the pressure-state-response model at two scales. At the landscape scale, the territory is analyzed using current remote information or information from previous years. Indicators such as air quality, carbon sequestration, sclerophyllous forest degradation, and degree of landscape fragmentation are used.

On the other hand, local monitoring examines native flora and fauna that serve as a witness to the condition of biological diversity and its trends. High Andean vegetation and the response of these fragile ecosystems to global warming are also being monitored as that of plant communities and other altitudinal gradients.



KEY LESSONS

- ➔ The four strategies addressed by the project -usually worked on as separate units- can be implemented simultaneously in a combined and integrated work.
- ➔ Capacity building is more effective through a "learning by doing" methodology.
- ➔ Communication and dissemination of results are vital to promoting and understanding a project of these characteristics, especially if all levels are considered: local, regional, and national.
- ➔ The implementation of the Communication, Education and Public Awareness Program (C.E.P.A., for its name in Spanish), proposed by the Convention on Biological Diversity and adapted for training, was a significant learning experience for municipal officials and local leaders.