POLICY BRIEF **07**

# Integrating Nature-Based Solutions in Planning Instruments

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# Integrating Nature-Based Solutions in Planning Instruments

## Santiago's case for a city-region multi-stakeholder approach to promote territorial equity and environmental justice

**The Regional Government of Santiago (RGS) aims to incorporate ecological planning criteria into its planning instruments and strategies, fostering a more resilient and equitable city-region. This policy brief outlines the city's learning-by-doing approach, presenting three pilot projects of Nature-based Solutions (NbS) at the city, neighborhood and micro scales. These initiatives offer an empirical base of results that can support other decision makers in the process of incorporating NbS into planning and development processes.**

## Key Messages

- The Green Infrastructure Plan "Stgo+" aims to improve institutional collaboration and consolidate an integrated, diverse and multifunctional System of Green Infrastructures in Santiago
- An important aspect identified is the alignment of the Stgo+ initiatives with the city's existing plans, strategies and planning instruments, to leverage as many synergies as possible and ensure that identified gaps are addressed.
- Another important point is to not take gray infrastructure for granted as the de facto solution. Rather, the need for and use of gray infrastructure in a project should be cause for constant reflection.



IMAGE: Santiago City Council

## A city-region multi-stakeholder approach to promote territorial equity and environmental justice

**To respond to the challenges of urbanization, the RGS has promoted actions for the development of Nature-based Solutions and their integration into city planning.**
**For that, "pilot project plans" at three different scales were designed:**

**Macro scale:**
**The Green Infrastructure Plan "Stgo+"**
At the city level, the Stgo+ Plan is a non-mandatory but strategic ecological planning instrument that seeks to transform Santiago into a more sustainable and resilient city. It aims to improve institutional collaboration and consolidate an integrated, diverse and multifunctional system of Green Infrastructures in Santiago. An important aspect identified for that is the alignment of the Stgo+ initiatives with the city's existing plans, strategies and planning instruments, to leverage as many synergies as possible and ensure that identified gaps are addressed.

**Meso scale: Actions to improve ecological aspects of public spaces**
Two actions were conducted that offer benefits at the neighborhood scale:
I) The restoration of the ecosystem of an abandoned public space (1400 m²): this project seeks to reduce urban heat islands with the use of the Miyawaki technique, one of the most effective and fastest methods for urban afforestation using native plants, thus contributing to local biodiversity.
II) The installation of a Sustainable Urban Drainage System (SUDS), to improve water infiltration in two public spaces (1060 m² in total): a plan was co-designed with the local community and local government civil servants that encompassed different intervention alternatives.

**Micro scale:**
**Actions to "green" public surfaces**
These small-scale interventions focused on:
I) Permeable pavement in a play area: different options were available and to be decided through a participatory process that was led by a private consulting firm.
II) Green reclassification of median strips and sidewalks: this process aimed at improving air quality and reducing soil pollution by combining different techniques. Another participatory process was led by the private consulting firm. In this intervention, sensors were installed to measure winds and particulate matter. Based on local perception, the initiative did have an effect on the reduction of suspended particulate matter.

## Successes of the initiatives were related to:

- Having an expert team (consultancy firm) in the implementation of the techniques;
- Allocation of timely and sufficient funding from the RGS to the Municipality;
- Participation of the local community with social representativeness (indigenous groups, neighbors, local and regional governments and civil servants) through participatory processes in all stages to reinforce ownership and commitment.
- Use of adequate techniques, both in ecological terms and regarding resource use and efficiency. It is also important to take into account local technical knowledge and available materials. In the case of Santiago, due to local climate conditions, considerations of adequate irrigation systems were central.

IMAGES: Santiago City Council

## Challenges and lessons learned:

- Sometimes, implementation of gray infrastructure was included in solutions due to being a more familiar or usual practice, rather than due to a lack of viable NbS alternatives. The need for and use of gray infrastructure in the projects should be a reason for constant reflection.
- Public-private partnerships showed different results among the projects. While, for some projects, they were key to enable implementation, in others they delayed results due to insufficient technical and financial capacity of the private partner, or unmet expectations due to lack of communication or misinterpretations of project goals.
- Some projects only included social participation in the evaluation stages. This related to some results being negatively affected by other social dynamics (e.g., vandalism), requiring unforeseen, and sometimes contradictory, adaptations (use of gray infrastructure or techniques). To prevent that, raising social awareness was identified as a key strategy. It was important to hold workshops with the local communities, involving them in the initiative from the start, and ongoing maintenance (in partnership with the municipality).

A general challenge identified is the need to address existing bureaucracy around the design and implementation of these projects or pilots. Public management could adapt to promote rather than slow down innovative processes.

IMAGE: Santiago City Council

## Policy Recommendations

- For a correct implementation of NbS, it is essential that the concept is normalized among all actors that need to be part of the solutions and strategies implemented (i.e., private companies, public organizations and civil society).

- There are persistent challenges regarding education and awareness about what successful NbS mean at the national, regional and local level. Before carrying out any intervention, a cross-cutting environmental capacity building and dissemination process is required, considering the dimensions and particularities of each scale of action.

- Technical knowledge about what type of NbS to implement in ecological planning must be consistent with the local context of each reality and requires a transdisciplinary analysis.

- The generation of public policies must respond to a cross-cutting effort between different levels of government (central, regional, and local) with transdisciplinary teams that provide a technical perspective, but without forgetting those who form the foundation of our society and have much to say and contribute – its citizens.

- Although public-private partnerships can be important strategies to enable implementation, they require cautious consideration regarding the technical and financial capacity of the private partner. It is also important to ensure good alignment and to establish strategic understandings with private partners, generating strategies that follow a minimum standard and avoiding unmet expectations.

IMAGE: Santiago City Council



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