Resilient Green Peripheries: the new Brazilian public policy for building green ecosystems in the most vulnerable areas

Périphéries vertes résilientes : la nouvelle politique publique brésilienne pour la construction d'écosystèmes verts dans les zones les plus vulnérables

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RÉSUMÉ

La nécessité de transformer les villes brésiliennes afin de les rendre plus résilientes face à l'avancée de l'urbanisation et aux changements climatiques implique d'améliorer les zones les plus vulnérables aux catastrophes. Le Secrétariat national des périphéries du Ministère des Villes, relevant du gouvernement fédéral brésilien, a reconnu la nécessité de rendre les périphéries plus vertes grâce à l'utilisation de solutions fondées sur la nature. Ainsi, en 2025, l'appel à projets « Périphérie verte et résiliente » a été lancé, avec pour objectif principal de réduire les risques hydrologiques, géotechniques et liés aux fortes températures, tout en favorisant une adaptation inclusive par le biais d'une planification communautaire participative. Sept initiatives ont été sélectionnées à travers le Brésil, avec des propositions de financement comprises entre 1,5 et 2,5 millions de réais, pour un total de 15,3 millions de réais destinés à la formation et à la mise en œuvre de solutions fondées sur la nature, telles que des jardins de pluie, des cuves d'évapotranspiration, des massifs pluviaux, entre autres. Toutes les initiatives seront mises en œuvre par des organisations de la société civile présentes dans les communautés. Le projet a débuté en décembre 2025 et doit durer 18 mois. L'objectif est d'élargir la portée de ce projet afin qu'il devienne une politique publique permanente et qu'il atteigne les Brésiliens vivant dans les régions les plus exposées aux catastrophes du pays.

ABSTRACT

The need to transform Brazilian cities to become more resilient in the face of advancing urbanization and climate change requires improvements in areas most vulnerable to disasters. The National Secretariat for Peripheries of the Ministry of Cities, under the Brazilian federal government, recognized the necessity of turning peripheral regions into greener spaces through the use of nature-based solutions. Consequently, in 2025, the "Resilient Green Periphery" public call was launched with the primary objective of reducing hydrological, geotechnical, and high-temperature risks, combined with inclusive adaptation through participatory community planning. Seven initiatives were selected across Brazil, with project proposals ranging from BRL 1.5 million to BRL 2.5 million, totaling BRL 15.3 million for training and implementing nature-based solutions such as rain gardens, evapotranspiration tanks, and stormwater planters, among others. All initiatives will be carried out by civil society organizations operating within the communities. The project began in December 2025 and is scheduled to last 18 months. The intention is to expand the scope of this project so that it becomes a permanent public policy, reaching Brazilians living in the country's most disaster-prone regions.

KEYWORDS

Community, NBS, training, vulnerability

1 INTRODUCTION

About 87% of Brazilians live in cities, and a significant part of these people, 61% of the population, are in urban concentrations, meaning metropolitan regions and agglomerations of large and medium-sized cities (IBGE, 2022). According to the National Confederation of Municipalities (2023), 93% of Brazilian municipalities were hit by some type of natural disaster between 2013 and 2022 (CNM, 2023). Data from the Digital Atlas of Disasters in Brazil show that, in 2023, Brazil presented a record in disasters, especially hydrological (involving waterlogging, intense rains, and flash floods) and climatological ones (such as drought, cold waves, and heatwaves), with more than 5,000 occurrences and a direct impact on the lives of more than 23 million people (MIDR, 2023), resulting in millions of displaced persons and billions in losses.

Of these, about 8.3 million people in Brazil live in areas vulnerable to risk; that is, they deal daily with issues of waterlogging, floods, or landslides. The scenario shows that Brazil is among the countries most vulnerable to extreme events and needs urgent public policies for prevention and adaptation. In this panorama, the "Resilient Green Peripheries" Public Call arises for the selection of proposals to establish partnerships between Civil Society Organizations and the Ministry of Cities, through the National Secretariat for Peripheries.

The main objective of this action is the execution of a project to structure initiatives for the inclusive adaptation of urban peripheries to climate change, involving Nature-Based Solutions (NBS), to improve the environmental quality of cities. The specific objectives to be achieved within the scope of this project are:

- To stimulate the development of NBS technologies;
- To foster the development of technical-participatory methodologies for community planning;
- To foster the development of practical-collaborative training methodologies for the construction and maintenance of Nature-Based Solutions that potentially generate employment and income for communities;
- To foster the development of governance models that induce the protagonism of the peripheral population;
- To generate data and contribute to the technical and theoretical-methodological maturation of the NBS Action in Peripheries, part of the *Periferia Viva* Program, and the Nature-Based Solutions thematic approach of the Resilient Green Cities Program; and
- To strengthen civil society organizations that work on community socio-environmental initiatives and projects in peripheral territories.

Forty-one eligible macro-areas were indicated throughout Brazil, where the existence of areas vulnerable to risk was confirmed. The call provided for 25 million reais, from which it was possible to select 11 proposals, 7 of which we will discuss in this study. The objective of this article is to analyze how the implementation of NBS adheres to mitigation and risk reduction with a main focus on the most vulnerable areas.

2 RESILIENT GREEN PERIPHERIES PROJECTS

The Ministry of Cities, through the National Secretariat for Peripheries, together with the Ministry of Environment and the Resilient Green City Program, celebrated the implementation of the Resilient Green Peripheries Call, in which 91 proposals were received and sent for analysis from all regions of the country. Of these, 61 proposals were classified, totaling an amount of R$ 137.8 million, a demonstration of the transformative potential of the proposed initiatives.

The call reinforces the Ministry of Cities' commitment to promoting urban resilience, environmental justice, and climate justice, encouraging the active participation of civil society in building a more sustainable and equitable future for all. Considering that these are projects created for the reality of peripheral communities, they join actions already consolidated by the *Periferia Viva* Slum Urbanization program that unites drainage, paving works, sanitary sewage, and water supply.

In **Belo Horizonte (MG)**, the *Instituto de Assessoria a Mulheres e Inovação* (Institute for Advisory to Women and Innovation) was awarded R$ 1.54 million for intervention in the Izidora community, a set of informal settlements

located in the northern region of the city. This project aims to create groups of young people and children trained as agents of territorial transformation, combining practical knowledge in agroecology and skills in digital communication. To this end, they will promote sustainable practices in land management, strengthening leadership and disseminating local knowledge.

The methodology to be adopted also proposes the combined use of technical, participatory, and pedagogical resources. In the technical field, the use of physical models, maps, aerial images, and scaled drawings will facilitate the visualization of proposals. In the participatory field, tools such as affective mapping, conversation circles, collective creation workshops, and tactical actions will promote listening and the protagonism of the residents. In the pedagogical field, the Architecture in the Periphery method emphasizes that each stage of the process is also a space for practical training, in which participants will learn to measure, draw, read plans, and understand technical concepts, appropriating not only the constructed solutions but also the knowledge necessary for their conception, reproduction, and maintenance. Among the planned NBS are rain gardens, infiltration trenches, and the revitalization of spring areas for a park.

In **Rio de Janeiro**, the selected institution was *Redes da Maré*, in the Maré Favela Complex, which will have R$ 2.48 million for project execution. The proposed participatory planning methodology—innovative, coherent, participatory, and integrated—combines technical-scientific and community knowledge; it involves updating existing diagnostics; carrying out community agreement processes; and the co-creation of technical elements (drawings, specifications, budgets) with multidisciplinary technical assistance. The proposed methodology for conducting NBS arrangement workshops, based on the principles of critical environmental education, provides for the elaboration of didactic-pedagogical materials and the decentralization of actions. It involves remunerated participation and volunteer task forces, promoting diversity and inclusion. It also provides for theoretical and practical workshops for each of the NBS components of the proposed NBS Arrangement. It also foresees post-implementation monitoring via workshops. The proposal anticipates 10 young people trained as environmental and climate agents, 10 Rain Gardens implemented, 5 Green Roofs built, 15 School Composters installed, and 7 Community Gardens implemented in Basic Health Units; 37 NBS Arrangement Workshops held in total, adding up to almost 370 direct participants.

In **São Paulo**, the allocation will be for the *Movimento de Defesa dos Direitos dos Moradores de Favelas* (Movement for the Defense of Slum Dwellers' Rights), in Santo André, with intervention in the Nova Centreville favela, with R$ 1.5 million. The participatory planning stage of the actions to be carried out involves the elaboration of an integrated diagnostic with the proposition of solutions built including perspectives and references from the residents themselves, in participatory processes, developing bonds and environmental culture with the community. Methodologies of sensitization and multisensory and creative experiences will be used to stimulate reflections based on feeling, thinking, and acting. In the implementation stage, to be carried out through socio-technical training workshops, an NBS Arrangement will be developed, composed of: implementation of stormwater planters, urban afforestation, construction of plant nurseries, and composting workshops.

In **Olinda (PE)**, the beneficiary community is Beira do Rio Condor, with R$ 2.36 million for the execution of the project by the *Federação de Órgãos para Assistência Social e Educação* (Federation of Organs for Social Assistance and Education). The proposed participatory planning methodology—innovative, coherent, participatory, and integrated—combines technical-scientific and community knowledge ; it involves updating existing diagnostics; carrying out community agreement processes ; and the co-creation of technical elements (drawings, specifications, budgets) with multidisciplinary technical assistance . for the NBS Arrangement workshops, it provides for remunerated participation and volunteer task forces, promoting diversity and inclusion. The activities range from initial leveling and theoretical training (afforestation, green roofs, rain gardens, rainwater harvesting and reuse, vegetable gardens, and composting) to practical training in implementation and post-installation monitoring.

And the one in Porto do Campi, **João Pessoa – Paraíba**, the project aims to guarantee community mobilization and co-responsibility in all phases, anchoring Nature-Based Solutions (NBS) in the knowledge of the territory, and promoting climate resilience based on lived realities. The methodology for carrying out NBS arrangement workshops proposed will rely on the creation of groups of young people and children trained as agents of territorial transformation, combining practical knowledge in agroecology and skills in digital communication in

order to promote sustainable practices in land management, strengthening leadership and disseminating local knowledge. The NBS Arrangement will be built collectively, including the location and typology of elements such as bioswales, bioretention, shading areas, and community gardens.

The peripheral neighborhoods on the banks of the Tucunduba basin, in **Belém (PA)**, will receive interventions designed by the *Fundação de Amparo e Desenvolvimento da Pesquisa* (Research Support and Development Foundation), with resources of R$ 2.5 million. The project foresees technical study activities, mobilization, and community engagement, through the historical rescue of neighborhood gymkhanas (competitions), adapted to the NBS theme. It is planned to associate different arrangement possibilities including sanitary ("affective bathroom"), evapotranspiration basin, "bambona" basin, green roof on pedestrian shelters and taxi/motorcycle taxi stands, and a rainwater harvesting and filtration system using açaí seeds and rain boxes, an experimental model to be replicated in the context of local community spaces and other collective spaces.

The initiative selected in the city of **Colombo (PR)** was that of the *Soylocoporti* institution, which will have R$ 2.39 million to execute the intervention in the Jardim das Graças II peripheral territory. The activities comprise formative meetings, community task forces, co-creation workshops, and the execution of ecological structures planned in the project—such as rain gardens, bioswales, community gardens, productive backyards, green slabs, recharge areas, street afforestation, and riparian forest restoration. The goal promotes practical learning about sustainable water, soil, and vegetation management techniques, articulating citizen science and popular participation. It also includes monitoring kits, educational workshops, and technical visits, strengthening community environmental governance and the monitoring of interventions.

Figure 01. Examples of anticipated NBS.

3 CONCLUSIONS

The Resilient Green Peripheries Program demonstrates that sustainability can be allied with social development by seeking to strengthen peripheral communities, which promotes inclusion and environmental justice. Therefore, the intention is to expand green areas and improve the quality of urban life through these activities. Furthermore, encouraging citizen participation in building more resilient territories becomes an essential strategy for fairer and more sustainable cities.

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