Practice notes provide rapid analysis of experiences related to a particular project. The analysis and recommendations are limited to the specific context presented in the note and should not be construed to apply more broadly.

PRACTICE NOTE

Accelerating Nature-Based Solutions in Brazilian Cities

Lessons learned in the structuring of projects in the ideation stage
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HIGHLIGHTS

- Nature-based solutions (NBS) are innovative and multifunctional alternatives that can make cities more resilient and inclusive. However, the scarcity of robust projects is a barrier to implementing these types of solutions in urban areas.

- The Accelerator of NBS in Cities, a mentoring and capacity building program, supported the structuring of ten NBS projects in the ideation stage, seeking to improve their viability and potential for implementation.

- This publication presents the Accelerator’s contribution to the development of these projects, focusing on the main challenges faced by the teams and the lessons learned throughout the acceleration process.

- All projects progressed to more advanced structuring stages. The teams reached the end of the acceleration process with more clarity about the objectives, impacts and feasibility of their projects.

- The economic-financial valuation, the preparation of the technical design and the engagement of internal and external actors were relevant challenges faced by the teams throughout the acceleration process.

- The program helped disseminate the NBS theme, encouraged the creation of projects and contributed to the capacity building of teams in the development of sustainable projects.

- The results of the acceleration program show the existence of public sector demand for this type of program, and that support mechanisms such as accelerators can foster the adoption of innovative solutions in Brazilian cities.
Executive Summary

EXECUTIVE SUMMARY

CONTEXT

Climate change is a global challenge, and its impacts have been affecting cities with increasing frequency. Extreme climate events are becoming more alarming and intense as the years go by. Extreme heat and the high occurrence of floods, for example, create risks to the livelihoods of millions of people (Dodman et al., 2022).

In Brazil, historical inequalities in access to urban infrastructure and services accentuate the adverse effects of climate change. Common problems in Brazilian urban centers, such as low access to drinking water, sanitation and decent housing, combined with irregular settlements in high-risk areas, increase the damage caused by extreme climate events.

It is necessary to promote measures that make cities more resilient, adapted and capable of promoting sustainable, inclusive and equitable development. Actions that tackle climate change must be developed and implemented in accordance with plans, agendas and goals established at the municipal, state and federal levels, with support from different sectors and social actors.

Nature-based solutions are actions aimed at the protection, sustainable management and restoration of ecosystems, which generate environmental, social and economic benefits (UNEP; IUCN, 2021). Applicable in different contexts and scales, NBS can generate multiple ecosystem services and contribute to increasing resilience and reducing the impacts of extreme climate events in urban communities, especially those in vulnerable situations.

In urban contexts, NBS directly improve climate resilience, and can also reinforce existing conventional infrastructure (Kabisch et al., 2016). Rainwater drainage and aquifer recharge, as well as temperature regulation and reduction of urban heat islands, are some examples of benefits generated by these interventions for urban populations and ecosystems.

The adoption of NBS as an urban infrastructure measure for the climate agenda is not yet a reality in Brazilian cities. This is partly due to the innovative nature of NBS, which contributes to the fact that their benefits are still poorly measured and recognized. Additionally, cities’ management teams face gaps in terms of administrative, technical and political capabilities for project structuring (CCFLA, 2022).

Given the scarcity of financial resources allocated to the initial stages of project preparation (Betti; Garcia; Evers, 2020), the structuring of robust projects with potential to attract financing is a challenge for the implementation of sustainable infrastructure in cities (Ozment et al., 2021). In light of the urgent need for more effective measures to address increasingly recurring extreme climate events, it is necessary to demonstrate the importance of NBS for the climate resilience of municipalities.

ABOUT THIS PRACTICE NOTE

The Accelerator of NBS in Cities was an initiative led by WRI Brasil, with technical support from Fundação Grupo Boticário de Proteção à Natureza and financed by the Caterpillar Foundation and the United Kingdom Department for Environment, Food and Rural Affairs (Defra UK). The program also had two partnerships: Cities4Forests, a global network of cities for forests; and the Aliança Bioconexão Urbana, an alliance of organizations engaged with the NBS agenda in Brazilian cities.

Over nine months, the Accelerator program offered synchronous capacity building and individualized mentoring with experts, in addition to technical visits and opportunities for sharing experience for ten projects in four Brazilian regions, seeking to make them more robust and improve their technical and financial viability, supporting their successful implementation. The projects were selected through a call for proposals launched by WRI Brasil in August 2022.
This Practice Note aims to show how the Accelerator of NBS in Cities contributed to the development of the selected projects. To this end, the main challenges faced by the participating teams during the structuring of urban NBS projects, their progress throughout the capacity building sessions and the main lessons learned were systematized and analyzed.

**METHODOLOGY**

The methodology used in this study focused on an in-depth analysis of two main aspects: (i) how the Accelerator of NBS in Cities contributed to the evolution of projects in the ideation stage and (ii) the main challenges faced by proponents in the development of projects throughout the acceleration program.

The first aspect was analyzed through the systematization and analysis of data collected throughout the capacity building sessions in the Acceleration phase. To monitor the project teams’ perception of the level of maturity and knowledge in connection with the topics covered in the Acceleration, a diagnostic tool developed for the Accelerator was used. This analysis was complemented with the mentors’ perceptions, recorded in minutes.

The second aspect was analyzed through semi-structured interviews carried out with the teams of the ten participating projects. The interviews aimed to capture the teams’ perceptions about the challenges mapped along their projects’ development process. Information collected about the origins of projects and the teams’ motivation to apply for the program complemented the analysis.

**RESULTS**

All projects showed progress in their structuring process after the completion of the Acceleration phase. The projects began as ideas and, throughout the technical capacity building sessions, individual mentoring with experts and exchanges with other teams, showed progress in their structuring and design. After nine months, three projects advanced from the ideation stage to the pre-feasibility stage; another four advanced to the stage of preparation of technical, economic and environmental feasibility studies; and another three reached the basic project level.

The Accelerator program acted as a catalyst for the creation and dissemination of NBS projects in cities. Four teams reported having created their projects specifically in order to apply for the program. One team also reported having taken advantage of the opportunity to apply for the Accelerator program to incorporate NBS into an existing project that did not previously include this type of solution.

According to the teams, the Accelerator’s main contribution was the step-by-step process of structuring a sustainable project. According to participants’ reports, the teams feel prepared to replicate the knowledge acquired in the future, whether in NBS projects in different contexts or in other projects focused on urban sustainability.

The economic-financial valuation of NBS projects represented a significant barrier for the participating technical teams. Governments, civil society and the private sector still lack reference materials to estimate implementation and maintenance costs of projects that have nature as a central element.

Refining the project scope and design was another challenging aspect identified during the program. Although participants had basic notions of NBS, many did not have practical experience with projects of this nature. The capacity building sessions introduced fundamental concepts for the implementation of NBS that helped the teams improve their projects and better equip them to face implementation problems.

Structuring the projects’ governance was also a challenge for the teams. The lack of understanding about the project’s importance and the predominant view of gray infrastructure as solution inhibited the involvement of additional local government actors. Civil society engagement was also a challenge due to the initial stage of the projects and the fear of generating premature expectations among external actors.
LESSONS LEARNED

The interest shown by municipalities from all regions of the country in the call for proposals demonstrates that there is demand for NBS acceleration programs aimed at the public sector. The initiative has also demonstrated that, within municipal technical teams, there is a desire to innovate and rethink the urban infrastructure of cities using NBS techniques.

The Accelerator has demonstrated the importance of systemic planning and an integrated vision of the territory, involving multiple actors in the development of nature-based solution projects. The impact of NBS at the landscape scale – especially the potential generation of ecosystem services – calls for a broader view of the territory, in some cases encompassing the scale of the river basin in the implementation site and considering the way in which the territory is occupied.

The transversality of NBS benefits requires that multidisciplinary teams be allocated to the structuring of projects. Although many NBS projects are designed by teams focused on environmental and urban issues, it is important to establish intersectoral partnerships with other departments, such as finance and planning, to ensure the development of robust projects.

Ensuring political support from the project’s conception phase is essential to effectively guide its development and execution. The municipality’s senior management must be continuously informed about the progress and results of the project so that they remain engaged. Political support is also key in ensuring that the scope of the project is in line with local urban planning and guidelines, and that the project is included in the municipal government’s fundraising efforts.

Capacity building and mentoring programs can leverage the creation and adoption of innovative solutions in Brazilian cities. The progress achieved by the ten projects that participated in the acceleration program demonstrates that, with the appropriate incentives and support mechanisms, it is possible to mitigate socio-environmental problems and vulnerabilities and take action on the climate adaptation agenda in urban contexts through the implementation of NBS.
1. Introduction

Extreme events resulting from climate change have become increasingly frequent and intense in cities around the world (Dodman et al., 2022), already affecting around 70% of cities (Negreiros et al., 2021). In the coming decades, urban centers will continue to face the impacts of this change, such as increases in average temperatures, rainfall and sea levels (Rosenzweig et al., 2015). Common characteristics found in cities, such as soil sealing, removal of natural ecosystems and informal settlements in high-risk areas, increase the effects of floods, landslides, heat islands and droughts (IPEA, 2016), directly affecting urban populations.

In developing countries, such as Brazil, this scenario is worsened by limited access to decent urban infrastructure and services (Margulis, 2017). The accelerated urbanization process of the past 60 years has not been accompanied by adequate growth in the supply of infrastructure and basic services such as water supply, sanitation and housing (IPEA, 2010), and has frequently occurred without prioritizing the occupation and use of the territory in an efficient and sustainable way (Azeredo, 2019). The result of this process reinforces and worsens the impacts of extreme climate events.

In Brazil, cities are already suffering from the negative effects of the climate crisis. Between 2013 and 2023, over four million people lost their homes or had to abandon them as a result of extreme climate events in the country (CNM, 2023). Droughts, floods and heat island effect in Brazilian urban areas result in average losses of BRL 13 billion per year (World Bank, 2023).

Climate risks are disproportionately greater for vulnerable populations. While, on average, 3% of Brazil’s total urban area is in high-risk regions, this percentage increases to 18% in slums and informal urban settlements (MapBiomas, 2023). This is because the poorer populations often reside in areas that are more susceptible to risks, such as informal settlements on hillsides or close to riverbeds, with low access to basic services such as water supply, sanitation and decent housing (World Bank, 2011).

This context reduces the resilience of these groups to climate change, increases the negative effects of the climate crisis and reinforces the social and economic vulnerabilities and inequalities that already exist in the country.

The United Nations Intergovernmental Panel on Climate Change (IPCC) sees the adoption of climate change adaptation measures in urban centers as essential (Bazaz et al., 2018). These initiatives must prioritize equity and environmental justice, thus promoting the population’s well-being, community engagement and sustainable socioeconomic development, and increasing the capacity of cities to face climate change (Rosenzweig et al., 2015). The planning of such actions must involve different sectors and social actors in the territory, promoting a joint effort that is in line with the agendas, plans and goals established by governments at the municipal, state and federal levels.

The reintegration of natural elements in cities through nature-based solutions (NBS) is an innovative and efficient alternative to face climate challenges and promote social equity. NBS is an umbrella concept comprising “actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits” (IUCN, 2020).

These solutions, also known as green infrastructure, ecosystem-based adaptation or urban ecological infrastructure (Childers et al., 2019), have gained relevance among experts and decision makers due to their potential in light of the social, environmental and financial consequences of growing climate threats, acting systemically to mitigate climate risks (European Commission, 2019). NBS also contribute to the advancement of global sustainable development agendas and goals, such as the Paris Agreement and the 2030 Agenda – Sustainable Development Goals (SDG) (FGB, 2021).
Investing in urban ecosystems and green infrastructure also generates multiple additional co-benefits. Besides reducing disaster risk and increasing resilience, implementing NBS in cities can lead to improved human health and water and food security, green job creation, new opportunities for recreation and tourism, and carbon storage (UNEP, 2021). Nature-based solutions also have the potential to reinforce and enhance existing urban infrastructure and make it more effective (Kabisch et al., 2016).

To take advantage of these co-benefits, the planning, execution and maintenance of NBS must consider the specific context of the implementation location (WWF International, 2021). In this sense, in order to be able to mitigate growing climate threats and reduce socioeconomic vulnerabilities and inequalities, NBS depend on the quality of governance, project design and planning, political will and community engagement (UNEP, 2021).

NBS are efficient in different territorial contexts and scales. Different solutions, such as green roofs, rain gardens, urban and peri-urban agriculture, green corridors, linear and river parks, renaturalization of rivers and restoration of slopes, have the potential to promote various ecosystem services, that is, generate benefits for society through natural ecosystems: from facilitating the drainage of rainwater and recharging aquifers to regulating the temperature of urban areas and preventing erosion and landslides (OICS, [n.d.]) (Figure 1). Furthermore, on the outskirts of cities, solutions such as the restoration and conservation of ecosystems contribute to the volume and quality of water that reaches reservoirs, ensuring water supply for the population, in addition to reducing the risks of floods (World Bank, 2021).

Figure 1 | Examples of NBS benefits for urban adaptation

- **Green roofs** generate thermal comfort and delay the impact of rain on the drainage system. In Chicago, green roofs helped reduce the speed of rainwater runoff by 36%.
- **Rain gardens**, bioswales and other drainage NBS drain rainwater, recharge groundwater table and mitigate floods. In Washington D.C., rain gardens at Canal Park capture 11 million liters of runoff water from the region and prevents contamination of the Anacostia River.
- **Green areas and afforestation** regulate temperatures and mitigate urban heat island effects. Medellin, in Colombia, has seen a 2°C reduction in the average urban temperature planting green corridors.
- **Linear parks** along bodies of water contribute to drainage, mitigating the impact of floods. In Niterói, the Orla Piratininga Park protects Lagoa Piratininga through filtering gardens, rain gardens, and bioswales. The system mitigates the impact of rainfall in the region.

Source: Adapted from Chu et al. (2019); European Commission (2019) and OICS ([n.d.]).
Studies show that NBS cost, on average, 50% less than traditional gray infrastructure and generate 28% more added value in terms of productivity, socio-environmental benefits and generation of resilient work chains (Khatri et al., 2022). Despite this potential, large-scale adoption of NBS as an urban infrastructure measure is not yet a reality. One of the main barriers is financing (Toxopeus; Polzin, 2021). Investment in adaptation represented only 9% (USD 6.8 billion) of urban climate finance in 2017 and 2018 (Negreiros et al., 2021). NBS, in turn, received only 0.3% of the total investment in urban infrastructure in the world in 2021 (Khatri et al., 2022).

The scarcity of “bankable” projects is a challenge for investment in sustainable infrastructure (Ozment et al., 2021). In other words, few projects manage to promote sustainability and, at the same time, meet the financial, technical and legal criteria required to be approved by financial institutions and attract investors (EIB, 2023). In general, NBS present advantages and benefits that are still poorly measured and recognized and include an element of innovation that may increase the perception of risk on the part of funders and investors, especially those in the private sector (UNEP , 2021).

Gaps in terms of administrative, institutional, technical and political capabilities at the municipal level also affect the bankability of projects (CCFLA, 2022). In Brazil, the federative structure assigns the conduction of environmental and urban policies to local governments; however, municipal administrations often face significant difficulties in terms of the skills required for this role (Grin et al., 2021). Projects with high impact potential fail to progress due to the lack of technical skills observed in many institutions, the absence of basic guidelines and poor knowledge about the development process applied to sustainable projects (Nassiry; Nakhooda, 2016).

The scarcity of resources to support the initial stages of project preparation adds another difficulty to this process (Betti; Garcia; Evers, 2020). Despite the existence of various initiatives to support project preparation in urban areas in Latin America (Oberholzer et al., 2018), there is a lack of initiatives supporting NBS projects in the early stages. Several projects in the ideation stage fall into the so-called “valley of death” – that is, they are unable to overcome the initial and intermediate stages of preparation (Betti; Garcia; Evers, 2020) —, ultimately resulting in a reduced number of nature-based solutions implemented in cities.

In this context, and given the urgency of ensuring cities are more resilient, WRI Brasil developed the Accelerator of Nature-Based Solutions in Cities. The Accelerator was the first Brazilian acceleration program for urban NBS projects and supported ten initiatives in the ideation stage in four regions of the country, seeking to enhance the efficiency and quality of projects, thus increasing their capability to attract funding and financing. Inspired by TheCityFix Labs initiatives, the program received technical support from Fundação Grupo Boticário de Proteção à Natureza and funding from the Caterpillar Foundation and the United Kingdom Department for Environment, Food and Rural Affairs (Defra UK), in addition to partnerships with the initiatives Cities4Forests, a global network of cities for forests, and the Aliança Bioconexão Urbana, an alliance of organizations engaged with the NBS agenda in Brazilian cities.

This publication summarizes and shares the experience of the Accelerator of NBS in Cities, especially in terms of the challenges faced by participants in developing their ideas, the advancement of projects during the acceleration and the program’s contribution to this evolution. This work is expected to contribute to the dissemination of the role and importance of NBS in Brazilian urban contexts, in addition to inspiring new initiatives that make the country’s cities more resilient, inclusive and sustainable.
2. Methodology

The present study focused on understanding two main aspects:

1. How the Accelerator of NBS in Cities contributed to the progress of projects in the ideation stage.
2. The main challenges faced by proponents while developing their projects throughout the acceleration.

The Accelerator’s contribution to the projects was assessed by comparing the project development stage reported by the teams before and after the acceleration. An analysis of the qualitative data collected with the teams throughout the program was also carried out.

The methodology adopted to answer the proposed questions consisted of two main steps conducted during the acceleration (Figure 2). For the first step, the data collected throughout the acceleration was systematized and analyzed. Monitoring the evolution of participating projects took place mainly through a project maturity diagnostic tool developed for the Accelerator (Appendix A). This tool is a self-assessment of the perception of the project’s level of maturity in terms of key criteria related to the development of urban NBS projects. For each question, the participating teams classified the maturity level of their projects on a scale of one to five – with one being the lowest maturity level and five being the highest – and justified their choices. Data was collected before and after the acceleration process. The perception of the participating teams was complemented by information collected by the capacity building mentors, recorded in mentoring minutes (Appendix B). During the first stage of analysis, the most recurring challenges related to project structuring, or those considered most relevant by the teams, were identified.

Figure 2 | Methodology timeline

Source: Prepared by the authors.
In the second step, semi-structured interviews were carried out with team representatives, using a questionnaire developed by the authors (Appendix C). The interviews were carried out in online meetings after the end of the acceleration, between the months of September and October 2023. The objective of the interviews was to further explore and validate the mapped challenges, in addition to complementing information about the projects’ origins, the motivations to apply for the program, the teams’ experience in the Acceleration phase and the Accelerator’s contributions to the projects’ development.

To enable future assessments of the Accelerator’s impact, a brief profiling of the non-accelerated applicant projects, presented in section 3.3, was carried out. The description includes information about the implementation location, type of proposed solution and lead proposing entity. This profiling was complemented by a questionnaire sent to the non-selected teams in December 2023, seeking to identify progress in the development of projects and contacts with potential funders and investors (Appendix D). The results of this survey are shown in section 3.5.

Importantly, the analysis conducted in this study encountered a few limitations. Firstly, the comparison of accelerated projects with non-selected projects was limited, constraining inferences about the isolated impact of the program on the projects’ evolution. Secondly, the analysis conducted depends to a large extent on reports from representatives of the accelerated projects, and the results reflect their subjective perspectives. Finally, the evaluation horizon of this study was limited to the nine months of the Acceleration phase, while it is possible that some of the effects of the Accelerator on the projects’ development will only be observed in the medium and long term.
3. The Accelerator of Nature-Based Solutions in Cities

3.1 THE INITIATIVE

Given the scarcity of structured and implemented NBS projects in Brazilian urban areas, the Accelerator of Nature-Based Solutions in Cities aimed to advance the development and financing of projects in the ideation stage. The ideation stage represents the initial stage of the project development process, in which project teams typically carry out the identification of priority impacts and partners and preliminary assessment of financial, legal and technical feasibility of proposed actions.

The Accelerator was structured in three phases: Acceleration, Impact and Scale (Figure 3). The Acceleration phase lasted nine months, between December 2022 and August 2023. Over this period, the program supported the structuring of ten projects through specialized capacity building, technical visits, individual mentoring and the creation of an innovation community which facilitated the exchange of experiences between project proponents, experts, financial institutions and people with previous experience in implementing this type of project.

The Acceleration phase was followed by the Impact phase. Between September 2023 and June 2024, the Accelerator offered personalized technical support to two of the ten projects, taking into account the specific needs of each project and providing opportunities to connect with potential funding and financing sources. The selection of projects for the Impact phase considered the performance of the teams in the Acceleration phase, including active participation in the capacity building sessions and activities offered, evaluation of the final quality of the projects, as well as the maturity, scalability and replicability of the proposals.

Finally, the Scale phase was mainly focused on disseminating the knowledge generated and promoting the long-term continuity of NBS initiatives. This phase was divided into three axes of action. The first axis is mainly represented by the production of this Practice Note, capturing and systemizing the knowledge and lessons learned with the initiative. The second axis corresponded to the dissemination of knowledge, with the promotion of engagement actions on a national scale. Finally, the third axis focused on an Accelerator replication strategy.
Figure 3 | **Phases of the Accelerator of NBS in Cities**

**ACCELERATION**

- Structuring of 10 projects through:
  - Specialized capacity building
  - Individual mentoring
  - NBS in Practice Sessions
  - Solution Coreation Hubs
  - Pitch to funders

**IMPACT**

- Specialized support for 2 projects through:
  - Personalized technical support according to the needs of each project
  - Opportunities to connect with potential funders and/or investors

**SCALE**

- Dissemination of knowledge and long-term continuity through:
  - Registration and management of knowledge and lessons learned from the initiative
  - Engagement actions on a national scale
  - Replication strategy for the Accelerator of NBS in Cities

*Source: Prepared by the authors.*

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**Box 1 | Overview of acceleration programs and measured impacts**

Accelerators are initiatives created to foster the development of innovative solutions. These programs combine intensive training, expert guidance and access to a network of contacts, culminating in a pitch to investors (Madaleno et al., 2021) – a presentation aimed at quickly persuading investors to invest in your business idea or project. In general, research on the impact of accelerators evaluates initiatives focused on startups (Crișan et al., 2019), with less information on the effect of these initiatives on other categories of participants. Among the impacts created by accelerators, it is possible to mention: access to financing (Madaleno et al., 2021); improvement in the ability to obtain equity financing (Hallen et al., 2020); validation of the product or idea; increased network of contacts and access to useful knowledge for product and service creation, company management or business model creation (Crișan et al., 2019). A positive effect of accelerators on the transition from an initial idea to a viable business was also identified (Kher; Yang; Newbert, 2022). In recent years, acceleration programs aimed at sustainable solutions have started to appear, such as the Teia de Soluções (FGB, 2023a, 2023b), the Acceleration Program for Conservation Units (ICLEI South America, 2020) and the TheCityFix Labs (Hurtado, 2021).
3.2 ACCELERATION STRUCTURE

Over the course of nine months, the Acceleration phase consisted of theoretical and practical activities, promoted individually and in groups (Figure 4), described below.

Capacity building

The program’s collective capacity building sessions were carried out synchronously through online sessions lasting three hours each. The curriculum was developed by WRI Brasil together with experts focusing on four fundamental themes for the initial structuring of nature-based solution projects in cities (Figure 5), which correspond to the Acceleration modules. Appendix E describes the capacity building curriculum in greater detail.

Figure 4 | Acceleration Activities

Group activities

- Capacity Building Sessions
- NBS in Practice
- Cocreation Hubs
- Pitch to Funders

Individual activities

- Diagnostics
- Mentoring with experts
- Practical activities and exercises
- Project dossier

Source: Prepared by the authors.
The contents were chosen in accordance with the program's objectives of providing technical support to teams in the structuring of their NBS projects, providing knowledge about the key aspects for their development. In total, 18 hours of synchronous capacity building sessions were offered over six months, from January to June 2023, with the participation of more than 40 people (Table 1). In addition to contact with experts from each area, the WRI Brasil team also monitored the needs of each of the ten projects throughout the Acceleration phase.

The NBS Technique module was the program's first capacity building session, focused on presenting the basic principles of the topic and the current scenario of implementation of NBS projects in Brazil. The synchronous capacity building sessions brought practical examples of already implemented projects. Thus, the teams' knowledge was expanded to develop more assertive projects, with the adoption of the best solutions for local problems.

Given the lack of more robust NBS projects in the country and with the objective of making projects financially sustainable by the end of the Acceleration, the Financial Structuring module was the most extensive in the curriculum. Over the course of three capacity building sessions, key concepts related to the projects' financial viability were presented, with content focused on cash flow creation, understanding potential rates of return, and valuation of the potential benefits of the project through cost-benefit analyses.

Teams were also introduced to financial instruments and potential sources of funding and financing for their projects. The Brazilian public budget, its models and budgetary processes were widely discussed, building the teams' technical capacity on the topic and improving knowledge about possible paths and strategies for the projects, and how to include them in public initiatives planned for the location where they are inserted.

The concepts of business model, impacts and risks were also presented to the teams in the Financial Structuring module, exploring important aspects for the development of organizational skills within the teams. One of the models presented in the module was the C Model, a social impact business model that has the potential to directly support the analysis of impacts and risks and the development of the project’s value proposition.
The following module, *Governance and Legal Aspects*, was included in the capacity building curriculum with the aim of expanding the teams’ understanding of the basic aspects of the projects’ legal structure and the importance of mapping actors and main stakeholders. Knowledge of institutional arrangements is key for the creation of effective project governance, establishing the pillars of systemic planning for the implementation of NBS projects.

The collective capacity building sessions ended with the *Pitch and Action Plan* module. It is essential that technicians and public officials improve their abilities to promote and explain the project, especially through pitches to investors and potential funders. These situations require a presentation format that technical teams from municipalities are generally unfamiliar with. In this context, persuasion strategies and objective and cohesive presentation techniques were explored. The last module also included strategies for the development of concrete action plans for the projects. This activity supported the teams in the planning, execution and monitoring of their projects’ macro-steps, mapping the milestones, deadlines, deliveries and necessary actors for the projects’ development.

### Table 1 | Number of participants and projects per capacity building session

<table>
<thead>
<tr>
<th>CAPACITY BUILDING</th>
<th>PARTICIPANTS</th>
<th>PROJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1: NBS Technique (online)</td>
<td>41</td>
<td>10</td>
</tr>
<tr>
<td>Module 2: Cash flow, revenues and expenses (online)</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Module 2: Financial instruments and funding and financing sources (online)</td>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>Module 2: Business models, impacts and risks (online)</td>
<td>31</td>
<td>10</td>
</tr>
<tr>
<td>Module 3: Governance and legal aspects (online)</td>
<td>31</td>
<td>9</td>
</tr>
<tr>
<td>Module 4: Pitch and action plan (in-person)</td>
<td>22</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors.

### Mentoring with experts

Project teams also received two hours of synchronous individual mentoring after each capacity building session. The mentoring sessions were conducted by experts in the capacity building session’s topic, with the aim of providing targeted support to the projects’ needs. Each project received 12 hours of mentoring over the nine months of the Acceleration phase.

### Practical activities and exercises

The capacity building sessions provided the basis for the technical, financial and governance structuring of the projects and was followed by individual practical activities and exercises, carried out with the aim of adapting the content covered to the reality of each project. The exercises developed by the teams were discussed during the mentoring sessions and delivered within the deadline agreed with the mentors.

### Cocreation hubs

The cocreation hubs were designed as opportunities to connect the participants, promoting the exchange of experiences and facilitating the collective construction of projects. The sessions took place in person, with representatives from the ten teams, at two different dates during the Acceleration. In February 2023, the teams met in Niterói (RJ) to discuss the concepts brought up in module 1, *NBS Technique*, and participated in a technical visit to learn about the city’s experience in structuring and implementing the Parque Orla
Piratinha project. The next meeting took place in June 2023, in São Paulo (SP), with the aim of discussing and further exploring the governance models and institutional arrangements of the projects, with support from the mentors from module 3, Governance and Legal Aspects. Further details on the cocreation hubs can be found in Appendix F.

**NBS in Practice**

Two NBS in Practice sessions were promoted to complement the capacity building sessions and cocreation hubs. The sessions consisted of online events, in webinar format, presenting practical examples of cities that had successfully implemented NBS projects in urban areas, promoting the exchange of experiences and collective discussion of challenges and learning. The first NBS in Practice session focused on NBS financing in Brazil and was attended by representatives of CAF (Development Bank of Latin America and the Caribbean) and the Socio-Environmental Development Program (Prodesol) of the municipality of Sobral (CE). The second webinar discussed the case of the Gentileza Urbana program in São Paulo (SP).

**Diagnostic Tool**

After the announcement of selected projects, in November 2022, the Accelerator launched its activities with the application of its Diagnostic Tool with the project teams. The tool, developed by WRI Brasil, played an important role in monitoring the evolution of projects and helping teams to better understand the reality of their projects, highlighting the points that needed greater attention during Acceleration. The Diagnostic constitutes a self-assessment of the perception of the project’s level of maturity in terms of essential criteria associated with the development of urban NBS projects. For each diagnostic question, described in Appendix A, the proposing teams evaluated the maturity level of their projects on a scale of one to five, in which one represents the lowest level of maturity and five the highest, justifying their choices.

**Project Dossier**

The Project Dossier is a document containing the main materials prepared by the participants during the Acceleration phase, describing the project’s entire structuring process. The information contained in the dossier includes general information about the project, information about the NBS techniques used, the project’s financial structuring, governance and legal aspects, in addition to an action and replicability plan. The final document delivered by the teams was reviewed by NBS experts, who provided their feedback on the content and made suggestions for improvement.

**Pitch to funders**

The Acceleration phase ended with a project pitch activity. During the in-person session, which took place in Brasília (DF) in August 2023, the ten teams pitched their projects to a panel made up of experts and potential investors and had the opportunity to receive feedback.

The two projects selected for the Accelerator Impact phase were announced at the closing event. The selection considered the evaluation of all materials generated throughout the acceleration: the activities and practical exercises delivered by the teams, the project’s dossier and the pitch made to the panel at the event. The teams’ level of commitment and attendance was also evaluated during the selection, with a review of the teams’ participation in the activities proposed, as well as the timely delivery of practical exercises and materials. Details of the criteria and weights used in the selection of projects for the Impact phase can be found in Appendix G. The two projects selected were Pirapora Park, in Maranguape (CE), and Ipês Park, in Campo Grande (MS).

At the event, the teams of the ten participating projects also had the opportunity to participate in business round tables with representatives from nine regional, national and international development finance institutions. Representatives of the federal government and potential partner institutions for the upcoming stages of project development and implementation were also present.
3.3 SELECTION PROCESS

Ten projects were selected from a pool of projects that applied to a national call for proposals, aimed at climate adaptation projects adopting NBS in cities. The call was launched by WRI Brasil through an online application platform, with a 30-day application period, between August and September 2022. During the application period, WRI Brasil also carried out an online FAQ session to answer the main questions about the call.

The call for proposals mainly targeted the public sector and local governments. Projects not led by the public sector needed to prove support and/or partnerships with the public sector to validate their application. Proponents were asked to submit a Declaration of Support issued by a government body relevant to the project implementation location and with local planning or execution powers, demonstrating agreement with the project’s objectives.

The projects were subjected to a 3-stage selection process (Figure 7). The first screening approved the applications that met the eligibility criteria established in the call for proposals. Only NBS projects focused on urban areas in the ideation stage were approved, with a scale larger than a single plot of land, and a Declaration of Support submitted within the deadline established in the call for proposals.

Subsequently, according to the criteria outlined in Table 2, the projects were evaluated by an internal WRI Brasil panel and by an external jury, composed of experts in the technical and financial aspects of NBS projects in cities.
Figure 7 | Project selection process

![Figure 7](image)

Source: Prepared by the authors.

Table 2 | Accelerator of NBS in Cities selection criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General assessment</td>
<td>Assessment of the alignment of the project’s main characteristics with the purpose of the Accelerator.</td>
</tr>
<tr>
<td>Potential benefits</td>
<td>Assessment of the project’s potential impact in the environmental, social and economic spheres such as ability to reduce disaster risk, increase resilience, reduce vulnerability and increase urban inclusion, all of which are objectives of the program.</td>
</tr>
<tr>
<td>Implementation potential</td>
<td>Assessment of social, political, technical, legal and financial opportunities and barriers associated with the project, as well as aspects related to governance, such as engagement and participation of different actors in the project’s formulation. Includes an assessment of the project’s alignment with legislation, state and/or municipal policies and sustainable urban development.</td>
</tr>
<tr>
<td>Scalability and replicability potential</td>
<td>Assessment of the internal (in the same territory) and external (adaptation of the solution to other contexts) replicability strategy, in addition to an assessment of the project’s innovative aspects.</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors.
The pool of applicants totaled 84 projects from all Brazilian regions (Figure 8), with the majority in the Southeast (65%), Northeast (17%) and South (12%) regions. Only 4% of the total number of applying projects came from the Central-West region, while 2% came from the North region. Applications included different typologies, such as urban river revitalization, urban parks and conservation units (Figure 8), all located in urban areas. The sectoral distribution regarding the lead proposing entity was also diverse, with a concentration of projects led by the public sector, including municipal governments, municipal secretariats, municipal councils and foundations (Figure 9).

Figure 8 | Projects applying to the Accelerator by type of NBS and region

Source: Prepared by the authors.
3.4 ACCELERATED PROJECTS

Following the evaluation process, ten projects in the ideation stage were selected to participate in the 9-month acceleration program. A brief description of the projects follows below. For a more detailed description, see Appendix H.

- **Águas do Capivara Program, Camaçari (BA):** protection and restoration of riparian forests along the Capivara River through forest restoration, social engagement and knowledge production.

- **Ipês Park, Campo Grande (MS):** implementation of a multifunctional urban park to mitigate the effects of flooding resulting from intense rainfall and create leisure spaces.

- **Verde Urbano, Estrela (RS):** creation of a drainage plan and implementation of NBS for rainwater management and mitigation of problems related to flooding and heat islands.

- **Pirapora Park, Maranguape (CE):** implementation of a range of NBS to revitalize the Pirapora River and improve the adjacent urban space.

- **Multifunctional Natural Park in Valley Floor Areas, Maringá (PR):** implementation of green corridors for rainwater management and creation of leisure spaces.

- **Social Housing and Environmental Recovery of High-Risk Areas, Raposos (MG):** resettlement plan and social housing program associated with the recovery and renaturalization of high-risk areas through a linear urban park.

- **Socio-environmental Recovery in a High-Risk Area in Morro Monte Serrat, Santos (SP):** environmental recovery and restoration through green interventions in five high-risk areas for landslides.

- **Monjolinho Multifunctional Park, São Carlos (SP):** decommissioning of a dam and installation of a multifunctional urban park, with renaturalization of the stream and recovery of the riparian forest.

- **Senhorinha River Park – from the River to the Street, São José dos Campos (SP):** improvement of public spaces with green and leisure areas around the Senhorinha River.

- **Green and Blue Infrastructure System, Sobral (CE):** creation of an interconnected and multifunctional system of urban waters and green areas aiming at the socio-environmental recovery of vulnerable areas.
Figure 10 | Geographic distribution and classification of NBS typologies of accelerated projects

Pirapora Park
Maranguape (CE)

Green and Blue Infrastructure System
Sobral (CE)

Ipês Park
Campo Grande (MS)

Multifunctional Natural Park in Valley Floor Areas
Maringá (PR)

Monjolinho Multifunctional Park
São Carlos (SP)

Verde Urbano
Estrela (RS)

Source: Prepared by the authors.
Among the NBS typologies of the selected projects, multifunctional urban parks predominated (Figure 10). The selected projects came from four of the five regions of the country, mostly from medium-sized cities, with populations between 100 and 500 thousand inhabitants, as well as a state capital, Campo Grande, in the state of Mato Grosso do Sul, with around 900 thousand inhabitants (Figure 11).

The majority of projects were led by the public sector, including secretariats, agencies, local councils and municipal institutes, in addition to a state secretariat. The teams involved actors from different sectors throughout the development of the Accelerator’s activities, with the collaboration of academia and the participation of civil society. Partnerships and collaborations were established at different stages of the projects’ journeys.

Before the official announcement of selected projects, the ten teams were asked to submit a Term of Commitment signed by the projects’ team leader, ensuring the team’s attendance and commitment to the activities proposed for the Acceleration stage.

In December 2023, a questionnaire was sent to the 50 teams proposing the projects that were not selected, as support for the development of a counterfactual analysis. The questions addressed aspects such as the project’s current stage of development, the progress made since applying to the Accelerator, whether there was support from external entities and the availability of financial resources up to the completion of the questionnaire (Appendix D).

In total, 11 teams responded. Of this total, only one reported progress in project structuring since their application to the Accelerator. This project, an urban agriculture initiative in the Southeast region, proposed by a third sector entity, has evolved from the ideation stage to a basic project stage. As reported by the team, they have been supported by the Department of Social Assistance, Food Security and Citizenship of the municipality for which the project is intended.

Additionally, another team reported that, despite not having advanced in the project development stages, negotiations were initiated with a development finance institution. The initiative to implement rain gardens for stormwater management was presented to the relevant state funding agency at the final event of the Acceleration phase. Although the project was approved in the financial institution’s internal process, its continued development was not approved by the municipal administration.
4. Evolution of projects

To identify the Accelerator’s contributions to the evolution of the ten projects, this section addresses details about the origin of the applicants’ ideas and motivations for participating in the program, as well as the projects’ previous maturity level. Subsequently, the changes observed after the program are presented, including the projects’ final stages, the evolution of projects’ maturity level and the teams’ perceptions about the influence of the Accelerator on their projects.

Although this practice note identifies positive contributions of the Accelerator to the selected projects, it is important to highlight that additional results may be verified in the future, over a longer term, as the projects are implemented.

4.1 ORIGIN OF PROJECTS

An important result of the Accelerator was its role as a catalyst for the creation of urban NBS projects by some of the teams (Figure 12). Four of the ten teams reported that the call for proposals represented an opportunity for the project’s leading institution to consolidate the NBS ideas they wanted to implement in their cities into a concrete proposal. This was the case of the following projects: Pirapora Park, Verde Urbano, Multifunctional Natural Park in Valley Floor Areas and Social Housing and Environmental Recovery of High-Risk Areas.

For another six projects, the Accelerator represented an opportunity to boost or improve existing initiatives at different stages. One of the teams (Ipês Park) already had a park project, to which they incorporated NBS. Three teams (Senhorinha River Park, Águas do Capivara Program, and Green and Blue Infrastructure System) took advantage of the call for proposals as an opportunity to combine existing projects and initiatives. Two other projects (Monjolinho Multifunctional Park and Environmental Recovery in a High-Risk Area in Morro Monte Serrat) applied to the program with the aim of accelerating or resuming the activities of projects already in progress.

Figure 12 | Influence of the Accelerator of NBS in Cities on project conception

- Projects ongoing before the Accelerator
  - Monjolinho Multifunctional Park São Carlos (SP)
  - Socio-environmental Recovery in a High-Risk Area in Morro Monte Serrat Santos (SP)

- Fragmented initiatives combined into a new project for the Accelerator
  - Senhorinha River Park São José dos Campos (SP)
  - Águas do Capivara Program Camaçari (BA)
  - Green and Blue Infrastructure System Sobral (CE)

- Existing projects that included NBS for the Accelerator
  - Ipês Park Campo Grande (MS)

- Projects created specifically for the Accelerator
  - Pirapora Park Maranguape (CE)
  - Verde Urbano Estrela (RS)
  - Multifunctional Natural Park in Valley Floor Areas Maringá (PR)
  - Social Housing and Environmental Recovery of High-Risk Areas Raposos (MG)

Source: Prepared by the authors.
4.2 MOTIVATION TO APPLY FOR THE ACCELERATION PROGRAM

During the interviews, participants were asked about their motivations to apply for the program. Their responses indicate that there is demand, on the part of local governments, for programs to support the structuring of high-quality projects focused on alternative solutions to the cities’ socio-environmental problems.

Eight teams were motivated by the opportunity to technically improve their projects through capacity building, especially in relation to NBS and the step-by-step structuring of sustainable projects. Among these teams, two responded that another important motivation was the project’s validation from an external entity (WRI Brasil), which would signal that the teams were on the right path and increase the visibility of the projects within their respective institution or sector. Both teams that already had a project in hand before the launch of the Accelerator and those that were inspired by the program to create one were influenced by these two factors (Figure 13).

Three teams saw the Accelerator as an opportunity to promote or improve existing initiatives and mentioned the possibility of improving and boosting the project with the support of experts as their motivation to apply. Finally, four teams reported seeing the Accelerator as an opportunity to seek new solutions to the environmental, climate and social problems faced by their municipalities, going beyond the gray infrastructure approaches traditionally adopted in urban projects. This motivation was especially highlighted by teams that developed their project ideas specifically for the program (Figure 13).

Figure 13  |  Relationship between the reasons for applying to the Accelerator and the origin of the projects

<table>
<thead>
<tr>
<th>Reason for Applying</th>
<th>Projects Already Existing</th>
<th>Projects Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>External validation</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Search for new solutions</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Expert support</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Technical improvement of the project</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Projects could mention more than one motivation for applying to the Accelerator.
Source: Prepared by the authors.
4.3 INITIAL MATURITY LEVEL OF PROJECTS

As mentioned, the ten projects were in the ideation stage at the beginning of the Acceleration phase. Observing the projects' maturity in each technical topic covered in Acceleration in a disaggregated way, it is possible to see that the projects were initially more advanced in aspects related to the NBS technique, and less advanced in financial structuring aspects - cash flow, revenues and expenses, financial instruments, sources of funds and business models, impact and risks (Figure 14).

These results may be related to the profile of the projects' leading teams. The majority of team members belonged to departments such as environment, urban and territorial planning, sustainability, housing and urbanism. Due to the scope of their work, these teams are generally not responsible for their projects' financial structuring aspects, but are more familiar with the NBS theme or were motivated to include it in their projects.

As for the Governance and Legal Aspects axis, the teams' self-assessment showed an intermediate level of maturity. Coordination with other secretariats, departments and stakeholders was highlighted as essential for project advancement, but it requires a well-designed strategy in order to be effective.

Finally, regarding the pitch and action plan, most teams reported never having presented a project in a pitch format or to a target audience of potential funders and investors. Also, as the projects were in the ideation stage, the teams had not yet developed structuring plans for the following stages.

4.4 EVOLUTION AND FINAL MATURITY OF PROJECTS

After the program's nine months, all projects demonstrated significant advances in the six technical axes covered in the capacity building sessions (Figure 15), according to the analysis of information collected by the Diagnostic tool before and after the Acceleration phase.
The projects reached the end of the program at more advanced stages of development compared to the initial ideation stage (Figure 16). As shared by the teams, the introduction of new technical content, previously unknown, and individual mentoring played a key role in this evolution. When analyzing the maturity in each axis in Figure 15 in a disaggregated manner, it is possible to observe that NBS Technique was the topic that showed the least progress (22%), reflecting the high level of maturity presented by the projects in this area before the acceleration. Despite this fact, all teams saw the need to reassess their project design and the scope of planned solutions during the first module. According to reports from participants, the content covered in the synchronous capacity building sessions and in the first cocreation hub, especially the case studies, showed that some of the previously considered solutions would not solve the problems and/or were not suitable for local contexts. During individual mentoring, the teams had the opportunity to refine their project design with the support of experts, more assertively targeting their solutions to the problems of each territory.

The greatest advance in the level of maturity of projects occurred in the Financial Structuring area (51%). As reported by the participants, the technical training, practical exercises and, above all, the individualized support from mentors allowed for substantial advances, especially considering the low initial level of knowledge on the topic. The Accelerator capacity building sessions were many participants’ first contact with topics such as cost-benefit analysis, cash flow and business model. Mentoring played an important role in systematizing and consolidating the knowledge acquired and refining the projects. By the end of the Acceleration, all teams had refined their initial cost estimates (Table 3). The module’s mentors highlight, as main identified advances, the abandonment of unviable ideas due to political or land tenure issues and greater clarity about possible sources of funds, challenges related to the projects’ political-institutional context and strategies to justify and fundraise for the project.

| Figure 16 | Reported stage of projects before and after Acceleration |

<table>
<thead>
<tr>
<th></th>
<th>Stage reported before Acceleration</th>
<th>Stage reported after Acceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideation</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Pre-feasibility</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Technical, economic and environmental feasibility studies (EVTEA)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Basic project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by the authors.
The teams also reported that they have gained a better understanding of the projects’ complexity and the need to engage stakeholders from different sectors in their construction and implementation. Throughout the financial structuring process, three teams started forming working groups (WGs) in their locations. These WGs were multidisciplinary, and were joined by representatives of different internal departments to support the projects’ financial structuring activities. Another four teams established goals for creating WGs in the projects’ action plans, and one team was already working with a managing group that supported the project prior to the Accelerator. An important advance during the mentoring was the development of engagement and mobilization plans for municipal governments and their various departments, especially considering the important role that these entities play in facilitating resources, external hiring and bidding processes, among other activities.

The mapping of strategic actors was also important for the advancement of the Governance and Legal Aspects axis, with reported maturity levels advancing from 55% to 85%. The mapping of stakeholders, a central theme of this axis, had already been discussed throughout the Acceleration program. In the Governance and Legal Aspects module, the teams refined their mapping and, as reported by the mentors, started thinking about other aspects, such as the projects’ potential opponents. Engagement strategies for different actors interested in and affected by the project were also discussed in the mentoring sessions. Additionally, the creation of WGs also allowed some of the teams to start materializing their governance strategies.

Finally, the maturity level in the Pitch and Action Plan axis evolved from 50% to 90%. Regarding the pitch, the teams reported that they were able to learn how to adapt their presentations to different audiences. The high level of maturity observed in the last diagnostic particularly reflected the training and individualized mentoring sessions, which allowed teams to prepare and adapt their presentations to a pitch format required for the final event of the Acceleration phase. As for the projects’ Action Plan, the high level of maturity at the end of the Acceleration reflects the teams’ understanding of the need for an effective project structuring process, with well-defined stages and considering the systemic and multidisciplinary nature of NBS.

Table 3  Estimated project costs before and after Acceleration

<table>
<thead>
<tr>
<th>PROJECTS</th>
<th>ESTIMATED COST BEFORE ACCELERATION</th>
<th>ESTIMATED COST AFTER ACCELERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Águas do Capivara</td>
<td>BRL 500 thousand to BRL 1 million</td>
<td>BRL 1.58 million</td>
</tr>
<tr>
<td>Ipês Park</td>
<td>BRL 1 million to BRL 50 million</td>
<td>BRL 62 million</td>
</tr>
<tr>
<td>Verde Urbano</td>
<td>Up to BRL 500 thousand</td>
<td>BRL 1.37 million</td>
</tr>
<tr>
<td>Pirapora Park</td>
<td>BRL 1 million to BRL 50 million</td>
<td>BRL 58.1 million</td>
</tr>
<tr>
<td>Multifunctional Natural Park in Valley Floor Areas</td>
<td>Not informed</td>
<td>BRL 181.3 million</td>
</tr>
<tr>
<td>Social Housing and Environmental Recovery of High-Risk Areas</td>
<td>Above BRL 250 million</td>
<td>BRL 28.3 million</td>
</tr>
<tr>
<td>Socio-environmental Recovery in High-Risk Area in Morro Monte Serrat</td>
<td>BRL 1 million to BRL 50 million</td>
<td>BRL 10 million</td>
</tr>
<tr>
<td>Monjolinho Multifunctional Park</td>
<td>BRL 1 million to BRL 50 million</td>
<td>BRL 20 million</td>
</tr>
<tr>
<td>Senhorinha River Park</td>
<td>BRL 100 million to BRL 250 million</td>
<td>BRL 74.1 million</td>
</tr>
<tr>
<td>Green and Blue Infrastructure System</td>
<td>BRL 1 million to BRL 50 million</td>
<td>BRL 66 million</td>
</tr>
</tbody>
</table>

Note: Costs estimated before acceleration were indicated by range.
Source: Prepared by the authors.
4.5 IMPACT OF THE ACCELERATOR ON PROJECTS

During the semi-structured interviews, the teams were asked about how the Accelerator impacted the development of their projects. The responses were summarized and divided into six main points:

1. **Technical capacity building of teams in the structuring of sustainable projects**: nine teams indicated that the main contribution of the program was understanding the necessary steps required to structure a sustainable project, converting an idea into a viable project. Participants expressed that the Accelerator’s technical training made them ready to replicate the knowledge acquired in the structuring of other projects, whether NBS projects in different contexts or other sustainable projects that do not involve NBS.

2. **Dissemination of technical knowledge related to the Acceleration modules**: eight teams highlighted the program’s impact on their level of knowledge about NBS techniques, financing opportunities and project governance.

3. **Development of a systemic view of projects**: three teams reported that the capacity building sessions, especially the first module, *NBS Technique*, impacted the way they saw the scale of their projects. Based on the content and mentoring, the teams understood the need to look at the entire micro-basin where the projects are located and assess the occupation of the implementation sites. A systemic view, which considers the landscape scale and the context in which initiatives are inserted, contributes to more effective actions.

4. **Prioritization of teams for project development**: three teams mentioned that a major obstacle to project development is the lack of prioritization and allocation of time for project design. In this sense, the Accelerator, especially in view of the Term of Commitment and Declaration of Support signed before the start of the program, blocked working hours for the teams to focus on their projects’ development. The Accelerator also represented an external validation (WRI Brasil) of projects and raised internal support for their development.

5. **Expert opinion on project development**: one team responded that individual mentoring had a great impact on their project. The mentoring sessions with the experts enabled the teams to refine their projects’ design and economic and financial viability, and expanded their vision of the projects’ potential.

6. **Creation of a community for experience sharing and a support network among participants**: participants reported that the opportunity to see the reasoning and path adopted by other teams during the capacity building sessions inspired and supported the construction of their projects. The exchange of information via messaging applications and spontaneous meetings between cities, especially in times of difficulty while doing practical exercises, also served as channels for sharing doubts and validating results. According to reports, the opportunity to exchange information with other teams created a significant sense of connection and mutual support. Even with differences in the approaches used, political and land tenure contexts, biodiversity and local biomes, the Accelerator program created a positive environment among participants, further benefiting the projects. Witnessing other teams face similar challenges highlighted the importance of sharing experiences and mutual support.
5. Main challenges to the development of NBS projects in the ideation stage

The first step in determining the main challenges faced by the teams during the Acceleration was the identification of the most recurring challenges, or those considered the most complex by the teams throughout the first nine months of the program. During the interviews conducted after completion of the Acceleration, these challenges were validated and discussed with project representatives. As a result, six main challenges related to the development of urban NBS projects in the ideation stage were highlighted (Figure 17). These challenges can be grouped into three axes: financial structuring, NBS-related technical skills and project governance.

<table>
<thead>
<tr>
<th>Financial structuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Economic-financial valuation</td>
</tr>
<tr>
<td>1.2 Identification of sources of funds and financing strategies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NBS technical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Preparation of project design</td>
</tr>
<tr>
<td>2.2 Definition, data collection or preparation, studies and diagnoses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Structuring of governance and internal alignment</td>
</tr>
<tr>
<td>3.2 Mobilization and engagement of civil society or external actors</td>
</tr>
</tbody>
</table>

5.1 FINANCIAL STRUCTURING

The main challenge encountered by the teams was the economic-financial valuation of the projects – that is, the definition in monetary terms of elements such as costs, benefits and ecosystem services. The most frequent explanation for team members’ difficulty with this topic was their lack of experience in this area, making it difficult for them to follow the content and prepare materials such as cost-benefit analysis and cash flow projections.
Cooperation with actors from areas that deal with economic-financial aspects is a possible alternative to overcome this challenge. However, half of the teams also mentioned a lack of internal engagement with finance, infrastructure and construction work departments as a reason for the difficulty in preparing the projects’ valuation.

Four teams also highlighted the absence of internal materials that could serve as guides for these calculations. As shared by one of the teams: “NBS infrastructures are not foreseen in the cost tables of the National Research System of Civil Construction Costs and Indexes and the Infrastructure Secretariat]. We need to forecast prices, but often we don’t know where to find the reference material. The structure of public budgets itself does not provide for green infrastructure”. Participants also highlighted the lack of collection of data necessary to support technical decisions related to the projects.

Another important challenge was identifying possible sources of fund and financing and developing financing strategies for the projects. Again, the teams attributed the challenge to a lack of knowledge or doubts about existing funding and financing options and the steps to access them. Two teams also indicated that the lack of internal political articulation and the need to wait for decisions from the municipality’s senior management limited their ability to define the project’s financing strategy. For two other teams, debt capacity makes it difficult to identify possible sources of funds and financing and develop a viable financing strategy.

5.2 NBS-RELATED TECHNICAL SKILLS

The project design was the most complex challenge in terms of technical skills related to NBS. This aspect includes the delimitation of the project’s coverage area and the definition and scaling of the NBS to be implemented. The teams attributed their difficulties to the lack of in-depth knowledge about NBS, a point reinforced by the mentors. Despite having a basic understanding of NBS, participants were unaware of fundamental concepts, such as ecosystem services and multifunctional landscapes, and many had no practical experience with NBS. This highlights the importance of not only disseminating the NBS concept, but also delving deeper into the technical aspects of these solutions and sharing information about successful projects that can serve as examples.

Another difficulty pointed out by the teams was the initial stage of the projects and the lack of diagnostics, studies and mapping of the context and area of project implementation. The preparation of these materials was outside the Accelerator’s temporal scope. One of the teams considered: “There is no in-depth knowledge of the technical issues regarding the intervention area and necessary equipment. This decision involves the execution of necessary diagnostics to conclude the NBS planning stage”. The mentors reinforced the importance of advancing the project design, even if improvements were needed over time.
Three teams mentioned the scale, scope and complexity of the projects as a factor that hindered the development of project design. One of the teams, for example, reported that, despite the municipality’s previous experience with NBS on a smaller scale, it encountered difficulties due to the scope and complexity of the project under acceleration.

Another challenge mentioned was the definition, collection and preparation of data, studies and diagnostics necessary for project structuring. At the beginning of the Acceleration, all projects had at least started mapping the necessary data, studies and diagnostics, and some teams were already preparing the materials. During the NBS Technique module, however, new information was identified that would need to be collected, updated or detailed.

The definition, collection and preparation of data, studies and diagnostics was also frequently highlighted as a challenge that restricts the progress of the project and hinders the project design process, as mentioned previously in this section. The teams identified this activity as an essential next step, but not yet underway due to the lack of financial resources to support the hiring of external experts.

5.3 PROJECT GOVERNANCE

The structuring of project governance and alignment with internal departments and other secretariats and government agencies were also reported as relevant challenges. Five teams mentioned the difficulty in involving other actors because they did not understand the importance of the project or because the project was not a priority outside the proposing secretariat or department. The innovative character of NBS, associated with the vision of gray infrastructure as a standard solution in municipalities, also makes the process of persuasion and alignment difficult. As shared by one team: “[NBS] is still quite unknown. This makes engagement more difficult. We still face difficulties when carrying out conventional works, which is what everyone works with and knows about, imagine [NBS], which no one knows about yet, no one knows how to carry out maintenance”.

The mobilization and engagement of civil society and other external actors also represented challenging steps. Only two projects directly engaged the civil society throughout the Acceleration. As shared by the proponents of one of these projects: “From the beginning, the strategy was to involve the community in all stages of the project. First, the team carried out technical visits to springs, rivers and permanent preservation areas (PPA) for diagnosis together with residents. Then, a meeting was held to present the project to the community, as part of an environmental education circle. From then on, plantings were carried out in PPA and workshops held in schools”.

For the other teams, however, the current stage of the projects was seen as an obstacle to starting this process. One of the teams reported during the interview that they see the participation of civil society as key for the project, but understand this as a future step, which requires a well-founded strategy and a project at a more advanced stage to be presented. In this sense, mobilization and engagement before the project reaches a certain level of maturity could generate demands and frustrations among members of civil society and external actors, especially when considering the long time it takes to execute project activities of this nature, which could lead to disengagement and even active opposition to the project.
Final Considerations

This study presented evidence on the experiences of public organizations in structuring NBS projects in urban contexts. These experiences serve as inspiration and bring important lessons for acceleration programs and for structuring NBS projects in cities. The main lessons learned throughout the structuring of the Accelerator and the Acceleration phase can be divided into four thematic groups: Lessons Learned from the Program, Project Structuring, Governance and Political Support.

LESSONS LEARNED FROM THE PROGRAM

- **The Accelerator has the potential to be a starting point for NBS projects and inspire new actions of this kind in Brazil.** There were cases of projects created specifically for the Accelerator program, in addition to cases in which the program motivated the inclusion of NBS in existing projects.

- **The Accelerator can also provide resources and support, helping NBS projects to advance to the next stages of development.** With the support of the acceleration program, all participating teams were able to improve the structuring of their projects, surpassing the initial ideation stage and progressing to more advanced stages of project development.

- **There is demand for acceleration programs within the public sector,** despite the fact that this type of initiative is more commonly seen in the private sector. The Accelerator of NBS in Cities developed, in a combined way, several capabilities required to advance sustainable solutions in the Brazilian urban context, in a program format that is not commonly targeted to government bodies.

- **The project ideation stage comprises different levels of development.** The ideation stage spectrum proved to be greater than initially anticipated – that is, the teams had different levels of knowledge about the structuring of sustainable projects and the NBS theme, in addition to different levels of practical experience with the development and implementation of these solutions. Consequently, the teams advanced at different paces in their project structuring processes throughout the acceleration.

- **The Accelerator’s pioneering experience provided lessons for future programs targeting urban NBS projects in the ideation stage.** Exploring formats that offer more one-on-one mentoring time may be advantageous, considering the positive impact reported by participants. A more detailed approach to NBS Techniques at the beginning can mitigate the difficulties encountered by teams at later stages of the project. The impact and effectiveness of the acceleration can also be increased with a few adjustments to the order of capabilities – the topic of governance, for example, could be addressed at the beginning of the acceleration.

PROJECT STRUCTURING

- **The Accelerator highlighted the importance of including systemic planning and an integrated vision of the territory,** involving different sectors of society in the development of large projects. A broad view of the territory at the landscape scale enables the inclusion of all the problems and challenges of the territory in the scope of the project.

- **Understanding the steps of project structuring is essential for government bodies.** It is important to promote training for policy makers and implementers in local governments on project structuring, providing concepts, methodologies, and practical examples to the teams.

- **The economic valuation of NBS projects is an obstacle in the context of Brazilian cities.** The absence of reference materials to calculate implementation and maintenance cost estimates makes it difficult to propose alternatives to gray
infrastructure in local climate agendas. Public budget structures often do not include lines of action for green infrastructure, impeding essential steps for project execution, such as participation in bidding processes. In this sense, local governments need to establish reference parameters to expand the use and, consequently, the benefits of NBS. Among other actions, it is important to include these solutions in official guidelines used in project development, such as pricing systems, as well as in public policies.

GOVERNANCE

Multidisciplinary teams are important for the development of good projects, due to the transversality of the objectives of NBS. The majority of team members who participated in the Accelerator worked at government departments focused on the environment and urban development, and the acceleration program brought to light the need to establish intersectoral relationships with other entities, such as finance and planning departments, to allow the construction of robust designs. These secretariats also play an important role in defining municipal funding priorities, and it is vital that they are familiar with NBS projects so that they can endorse their funding and financing. A possible solution would be the creation of project management units involving several departments during the different project stages, which would contribute to the project’s continuity in times of transition, such as changes of administration.

POLITICAL SUPPORT

- It is important to rely on the support of decision makers for project execution, as early as the ideation stage, keeping them informed about the actions and progress of the project. This helps secure resources and the inclusion of proposed interventions in local plans and guidelines. This support needs to be continually reinforced, especially in light of the electoral cycle, for example through the presentation and dissemination of intermediate project results in seminars, events and media outlets.

- Strategies to mitigate the risk of project discontinuity due to administration changes should also be planned in the initial stages of the project. Potential measures to reduce the
risks linked to the change of administration include the participation of actors involved in different electoral cycles or independent of them, in addition to institutionalizing the project through its connection with decrees, laws or urban planning instruments, such as the master plan. These initiatives require coordination between different actors and are closely related to effective political articulation efforts.

- **Team efforts need to be concentrated on project development and the NBS theme disseminated within local governments.** Under the Term of Commitment and Declaration of Support signed after the project’s selection, the Accelerator promoted the prioritization of actions aimed at nature-based solutions within the government bodies responsible for the projects, as a result of the deadlines and commitments assumed throughout the Acceleration, as well as the technical training of teams on the topic.

The teams completed the Acceleration phase with a greater level of understanding about the complexity of NBS projects and more clarity regarding the steps required for building solid projects. All projects that participated in the program progressed from the ideation stage to more advanced structuring stages. The teams have expanded their ability to coordinate with different sectors of government and civil society and have acquired the necessary information to dialogue with financing agents.

Furthermore, despite not covering all non-selected projects and representing a small sample, the counterfactual analysis suggests that projects that participated in the program experienced faster-paced technical and political advancement when compared to those that did not participate.

Participants have also expanded their knowledge about the benefits of NBS for climate resilience in cities, understanding that their innovative nature is a challenge that needs to be overcome in the process of engaging and persuading managers and decision makers.

The evolution of the ten projects involved in the Accelerator of Nature-Based Solutions in Cities shows that, with the appropriate support mechanisms, it is possible to develop robust NBS projects in urban contexts to solve real problems faced by the population, especially in the climate adaptation agenda.
Appendices

APPENDIX A – PROJECT MATURITY DIAGNOSTIC QUESTIONNAIRE

(Self-assessment on a scale of 1 to 5)

Axis 1 – NBS Techniques:
1. Does the team understand the concept and applicability of NBS in general?
2. Regarding your project, does the team know which diagnoses, data and studies could and/or should be previously carried out to support the project’s development?
3. Regarding your project, is there an in-depth technical understanding of the chosen NBS and its value (financial and non-financial)?
4. Regarding your project, is there clarity about the beneficiaries and actors who need to be involved?
5. Regarding your project, is there knowledge about how it contributes to increasing resilience and reducing vulnerabilities and/or how it is inserted within a systemic vision of NBS?

Axis 2 – Cash Flow, Revenues and Expenses:
6. Does the team understand the main steps for structuring and implementing the project?
7. Have the investment needs been identified for the various steps of the project?
8. Has the potential for revenue generation and direct or indirect cost reduction been identified for the chosen NBS?
9. Is there an understanding of the project’s cost-benefit ratio?

Axis 3 – Financial Instruments and Sources of Funds:
10. Does the team have knowledge on how to finance the project with public funds?
11. Does the team have knowledge on how to finance the project with funds originating from partnerships with the private sector?
12. Does the team have knowledge on how to finance the project with funds from financial institutions?
13. Is there a strategy for tapping these potential sources of funds?

Axis 4 – Business Models, Impact and Risks:
14. Does the team have knowledge on how to create a Business Model and apply the Theory of Change, considering the socio-environmental impact and financial viability of the project?
15. Have the project’s main risks been mapped and identified?
16. Is there an understanding and/or mapping of the main strengths, weaknesses, opportunities and threats related to the project?
17. Is there an understanding of the potential positive and negative impacts that may be caused by the project and how they are reflected in the required actions for implementation?

Axis 5 – Governance and Legal Aspects:
18. Is the team clear about how different groups of people see the project and how they will be involved in the project’s structuring?
19. Are there any plans for strategic partnerships or institutional arrangements?
20. Is there clarity about the legal structure, format and/or governance model for the project’s implementation?
21. Were strategies adopted to increase awareness and engagement regarding the project?

Axis 6 – Pitch and Action Plan:
22. Is the team clear about the project narrative and the main points to be covered in the pitch, in terms of structure, public speaking and strategy in drafting the speech?
23. How does the team evaluate the project pitch to investors, partners and beneficiaries?
24. What is the level of development of the action plan/planning process to get the project off the ground?
25. Is the team aware of strategies for project replication/scaling?
APPENDIX B – TEMPLATE OF INDIVIDUAL MENTORING MINUTES

[PROJECT NAME]

Duration of mentoring (check): ( ) 1 hour ( ) 2 hours

1. Date: ________, 2023.
2. Participating mentors:
3. Project participants:
4. Content presented:
5. Next steps and directions:
6. Mentors' assessment of the project (structure, team, etc.):
   a. Highlights:
   b. Attention points:

APPENDIX C – SCRIPT FOR SEMI-STRUCTURED INTERVIEWS

About the project
1. Where did the idea for the project come from? From one person or the team? Did the idea already exist or was it created specifically for the Accelerator?
2. Were other municipal government officials involved in the project? If yes, how many/who?
3. Were other entities outside the municipal government involved in the development of the project?
4. Was the municipal secretary aware of the project? And the mayor? Since when?
5. What stage of development was the project at when the team applied to the Accelerator?
   a. Concept definition/ideation
   b. Pre-feasibility
   c. Technical, Economic and Environmental Feasibility Study (EVTEA)
   d. Basic project
   e. Executive project/licensing
   f. Implementation

6. What stage of development was the project at the end of the Acceleration?
   a. Concept definition/ideation
   b. Pre-feasibility
   c. Technical, Economic and Environmental Feasibility Study (EVTEA)
   d. Basic project
   e. Executive project/licensing
   f. Implementation

About the Accelerator
7. What were the team's motivations for applying to the Accelerator of NBS in Cities?
8. How has the participation in the Accelerator made a difference in the development of the project?
9. Has the exchange with other cities impacted the project/the project's development? If yes, how?
10. In terms of the number of hours dedicated and the team's effort spent on the Accelerator, was the workload adequate? If the team has encountered problems, what would have helped solve them?
Main challenges and lessons learned during the Acceleration

11. According to the team's perception, rank in descending order (from highest to lowest) the following challenges potentially faced by the project throughout the Acceleration phase of the Accelerator of NBS in Cities:

   a. Project structuring (definition of steps, actions, etc.);

   b. Systemic view of the project (integration of solutions, integration with macro-drainage, connection with urban mesh, connection with gray infrastructure, among others);

   c. Definition/survey/preparation of data, studies and diagnoses necessary for project structuring (drainage studies, mapping of PPA, hydrological studies of the river basin, geotechnical situation of the intervention area, situation of the population, etc.);

   d. Preparation of project design (NBS definition and/or detailing, scaling of solutions, delimitation of the coverage area, etc.);

   e. Economic-financial valuation for cash flow (benefits, ecosystem services, expenses, cost reduction opportunities, etc.);

   f. Calculation of the project's estimated total investment cost;

   g. Identification of possible sources of funds and project financing strategies;

   h. Knowledge and/or understanding of the technical content and/or tools presented in the Acceleration;

   i. Structuring of project governance and internal alignment of municipal departments;

   j. Mobilization and engagement of civil society/external actors;

   k. Project's need for legal compliance;

   l. Construction of the project narrative and pitch

12. Why did the team consider X to be the biggest challenge faced while structuring the project throughout the Acceleration?

13. According to the team's perception, was this challenge overcome during the Acceleration? If yes/no, why?

14. Why did the team consider X to be the second biggest challenge faced while structuring the project throughout the Acceleration?

15. According to the team's perception, was this challenge overcome during the Acceleration? If yes/no, why?

16. Why did the team consider X to be the third biggest challenge faced while structuring the project throughout the Acceleration?

17. According to the team's perception, was this challenge overcome during the Acceleration? If yes/no, why?

18. Would you like to comment on any other challenges/obstacles in the development of the project throughout the Acceleration?

19. Would you like to comment on any other success factors in the development of the project?

Team Profile

20. How long has each member of the official team worked at the secretariat/department/institution?

21. What is the level of education of each team member?

22. Are all team members career officials?

23. Did the team members have any previous experience developing projects with NBS elements?

24. Was any team member designated as primarily responsible for the project during the Acceleration?

25. Have any team members participated in other acceleration programs before? If yes, when/which/why?
APPENDIX D – QUESTIONNAIRE FOR NON-SELECTED PROJECTS (COUNTERFACTUAL)

1. Project name and city
2. According to the team's perception, what stage of development is the project currently at? (Multiple choice)
   a. Concept definition/idea
   b. Pre-Feasibility
   c. Technical, Economic and Environmental Feasibility Study (EVTEA)
   d. Basic Project
   e. Executive Project
   f. Implementation
3. Has the team made progress in structuring the project since applying to the Accelerator program in August/September 2022?
4. If you answered "yes" to the previous question, has the team received support from any external institutions for the project’s advancement?

APPENDIX E – SUMMARY OF CAPACITY BUILDING SESSIONS

Capacity Building Session 1: NBS Techniques

Introduction
Nature-based solutions (NBS) are actions to protect, sustainably manage, and restore natural and modified ecosystems. NBS are solutions that seek to address social challenges in an effective and adaptive way, simultaneously providing benefits to human well-being and biodiversity. They contribute to overcoming challenges such as climate change, reducing the risk of disasters and improving food and water security, in addition to being essential for economic development.

NBS projects are inspired and sustained by nature. These projects are multifunctional, and seek to tackle more than one specific problem, with the potential to generate results and benefits for various urban, social, environmental and economic agendas. Learning about the potential, main barriers and possibilities offered by NBS is an important step towards implementing them.

Objective
Present and discuss the basic principles and current scenario of NBS in Brazil, as well as fundamental aspects for the implementation and systemic planning of NBS.

Expected results
Participants will have the opportunity to improve the technical aspects of their projects, identifying existing gaps and evaluating potential enhancements and adaptations that may be included in the projects.

Content
- What are nature-based solutions? Conceptualization and contextualization of NBS in Brazil
- Case studies in Brazilian cities and overview of NBS financing in the country: who finances and who is financed?
- Basic principles of NBS
  - Cocreation and engagement
  - Monitoring
  - Systemic planning of NBS
- Municipal Master Plans
- Other urban planning instruments
- NBS programs, policies and projects
- Implementation challenges and financing barriers
Bibliographical references for the capacity building session


Capacity Building Session 2: Financial Structuring - Cash flow, revenues and expenses

Introduction

The potential return generated by an NBS project can be analyzed from the perspective of society; such analyses are generally conducted by public managers, when selecting projects that increase social well-being. The potential return of NBS can also be analyzed from the standpoint of the private sector, with such assessments generally conducted by private institutions’ managers in order to understand the behavior of the project’s cash flow, its financing needs and risk-adjusted return. (FGVCes, 2016).

Both perspectives are valid, but very different – and they use very different analytical tools. In the first case, the use of Cost-Benefit Analysis (CBA) or Multi-Criteria Analysis (AMC) is recommended, both aimed at the public environment. In the second case, more traditional financial analyzes are recommended, involving cash flow projections, internal rate of return and net present value estimates, among other indicators. It is important that public managers have knowledge of this second type of analysis, so that they are able to dialogue with the private sector during fundraising efforts.

Objective

Discuss basic investment principles and the project’s financial viability based on the identified social, economic and environmental benefits. Understand the NBS’s cash flow pattern (operating costs, investment needs, revenue forecast). Debate the balance between financial viability and social, environmental and economic impacts, generation of ecosystem services and other benefits.
**Expected results**
Participants will better understand their projects’ cash flow pattern. Based on this knowledge, they will be able to estimate, according to the steps required for implementation, their projects’ costs and investment needs, as well as revenue and cash flow projections to cover future financial obligations under various financing structures.

**Content**
- Main steps for structuring an NBS project
- Identification of investment needs and their probable timing
- Identification of potential revenue generation/cost reduction opportunities arising from NBS
- Cost-benefit analysis
- Project profile for investment

**Bibliographical references for the capacity building session**

**Capacity Building Session 3: Financial Structuring - Financial instruments and sources of funds**

**Introduction**
Initiatives with climate and environmental impact can be financed by a series of public, private, multilateral, bilateral, national and international funding sources. This wide range of options, which has seen significant diversification after the signing of the Paris Agreement, is usually placed within the so-called “climate finance” or “green finance”. To understand the main trends and recent characteristics of green and climate finance specific to Brazilian urban areas, the training session presented the different types of existing sources of funds and their main aspects.

**Objective**
Present an overview of available funding and financing options and processes for meeting minimum requirements, discuss possible paths and what is needed to access each type of financing for NBS projects.

**Expected results**
Project proponents will be able to analyze the advantages and disadvantages of different funding and financing sources compared to their growth objectives, main risks and current stage of project development.

**Content**
- International green and climate funds (such as the Global Environment Facility and the Green Climate Fund)
- Multilateral and bilateral development banks (such as the World Bank, Inter-American Development Bank (IDB), Latin American Development Bank (CAF), New Development Bank (NDB), European Investment Bank (EIB), French Development Agency (AFD), FONPLATA Development Bank (FONPLATA) and KfW Banking Group)
- Brazilian Development Bank (BNDES) - a financial institution that supports national and regional development; two regional development banks: the Minas Gerais Development Bank (BDMG) and the Regional Development Bank of the Brazilian Southern Region (BRDE); and a state-owned financial institution, Caixa Econômica Federal (CAIXA)
- Green and Climate Bonds
- Partnerships with the private sector (Public-Private Partnerships, Concessions, Credit, Capital Markets)
- Public Budget (integovernmental transfers to states and municipalities; non-refundable resources, grants, donations; taxes; fines; direct charges or user fees; tax incentives and subsidies; recovery of real estate appreciation)
Bibliographical references for the capacity building session


Content
- Discussion of business models, theories of change and C Models considering the socio-environmental impact and financial viability of projects
- Step by step development of C Model
- Assessment, monitoring and definition of indicators related to C Model
- Identification of project risks and mitigators
- SWOT analysis (strengths, weaknesses, opportunities and threats)
- Summary of projects’ main risks and forecast scenarios, as well as possible mitigators
- Understanding of factors that may affect revenues and cash flows and how to mitigate these risks in order to reassure potential investors or creditors, thus contributing to reduce the cost of financing.

Bibliographical references for the capacity building session


Capacity Building Session 4: Financial Structuring - Business model, impacts and risks

Introduction
After recognizing the potential benefits, impacts and value generated by NBS, it is necessary to develop the rationale according to which the NBS project will generate value, describing the different dimensions of its operation. One of the main instruments used for this purpose is the Business Model Canvas (Canvas), a strategic planning and management tool that supports the development and modeling of new or existing businesses.

To more forcefully address the problems that the NBS intends to solve, it is necessary to incorporate Theory of Change elements. This involves starting from an integrated vision, including all the questions necessary to fully understand, model and reflect on a project with socio-environmental impact. Participants will work with the C Model, in which business flow and organizational capacity support an intervention expected to generate social and/or environmental changes.

Objective
Understand and map the projects’ organizational capacity, market opportunities and theory of change. In addition, a mapping of risks of NBS projects will be carried out to better inform strategic planning.

Expected results
Participants will understand the importance of developing a C Model for each project and will know how to identify the main impacts and risks of NBS projects.
Capacity Building Session 5: Governance and Legal Aspects

Introduction
The literature refers to the implementation of NBS as a result of collaborative governance processes, integrating different public management departments or areas, citizens, private initiative and civil society (Frantzeskaki, 2019; Kabisch et al., 2016). The concept presents the idea of cocreation as a central element for NBS implementation, considering the engagement of different sectors in the construction of initiatives focused on NBS. It is also necessary to evaluate the various legal structures available for NBS implementation.

Objective
Present the importance of clear and defined governance and an analysis of the implications of different legal structures for project implementation. Aspects of inter-organizational cooperation for public projects will be covered, as well as financial structure models – such as a special purpose vehicle, or holding company, combining a variety of projects with different sources of revenue and a conventional equity fund. Strategic planning and financial planning are essential instruments for a successful implementation of initiatives.

Expected results
Participants will understand the basis of their preferred legal structure for the project, as well as the main governance aspects to be included and further developed. It is also expected that participants will be able to contextualize their projects in relation to the Brazilian political-institutional reality, based on their participation in debates on contemporary political participation and the public sector.

Content
- Mapping of institutional arrangements and assessment of state capabilities
- Decision-making, coordination/articulation and monitoring processes
- Institutional coordination, networks and intergovernmental coordination
- Political inclusion, social participation and partnerships: interactions between governmental and non-governmental actors in institutional arrangements
- Structuring of social impact contracts in Brazil
- Municipal councils
- Communication and engagement

Bibliographical references for the capacity building session


Capacity Building Session 6: Pitch and Action Plan

Introduction
The fourth module and sixth capacity building session focused on supporting participants in the continuous development of their NBS projects after the completion of the Acceleration program. To this end, the training session covered fundamental concepts for drafting a pitch and an Action Plan.

The pitch is a quick presentation aimed at sparking the interest of actors outside the Accelerator in the projects developed. The pitch can target investors, future partners and/or citizens. The objective is to show that the project is viable, promising and capable of generating social and environmental benefits, in a few words and in an engaging way. A well-prepared pitch is essential to attract investors, partners and beneficiaries, who need to understand and trust the benefits of a project in order to contribute to the initiative.

Action plans, in turn, are a project management tool used during the planning, execution and monitoring stages of an initiative. The action plan maps the macro-steps, their activities, actors involved, deadlines, intermediate milestones, among other aspects related to the development of a project. This tool mobilizes the various actors who need to contribute to getting a project off the ground, describing in different levels of detail what needs to be done for a project to evolve.

Objective
Support participants in planning and presenting their projects after the completion of the Acceleration.

Expected results
Ensure that projects and results achieved are communicated through speeches (pitch) and a project management tool (action plan), facilitating the contribution of partners, funders and citizens.

Content
- Main points to be covered in a pitch, in terms of structure, public speaking and speech construction strategy
- Structure: items necessary for the complete presentation of the idea/project, reinforcing important points to be described in the pitch
- Strategy and storytelling: simple techniques to make better use of the time available for the speech, such as choosing the target audience and selecting important information
- Communication and public speaking: tips for improving speaking, both in person and virtually
- Action Plan and main planning aspects
- Methodologies for planning and monitoring action plans
- Practical dynamics for developing action plans and pitches

Bibliographical references of the capacity building session


APPENDIX F – EVENTS REPORT OF THE ACCELERATOR OF NBS IN CITIES

Cocreation Hub I and Guided Tour

Details:
Date: February 6 and 7, 2023
Location: Niterói (RJ)
Number of participants: 23

Objective:
Bring together, in person, the teams of the ten selected projects to carry out technical activities related to the benefits of NBS, identify the actors that need to be involved and the main beneficiaries, understand the financial and non-financial value of the projects and share experiences.

Schedule:
February 6, 2023: presentation of theoretical content by module 1 mentors (NBS Techniques) on the challenges and steps related to the project’s implementation, discussion of ecosystem services, primary benefits and co-benefits of NBS and cross-mapping. The presentation was followed by World Café dynamics in which the teams presented their projects and received feedback from other teams.

February 7, 2023: guided tour of the Orla do Piratininga (POP) project, a successful case of NBS implementation in Brazil. Next, a presentation by the team from the municipality of Niterói (RJ) regarding the main stages and NBS techniques used in the POP. Closure with a FAQ session.

Cocreation Hub II

Details:
Date: June 20, 2023
Location: São Paulo (SP)
Number of participants: 22

Objective:
Bring together, in person, the teams from the ten selected projects to develop Governance Models and Institutional Arrangements for their projects through the mapping of institutional arrangements, decision-making processes and actors involved.

Schedule:
Presentation of theoretical content by module 3 mentors (Governance and Legal Aspects) covering risk matrix, governance models and mapping of stakeholders, followed by practical application of the SWOT analysis of the ten projects and round of discussion between the participating teams.
NBS in Practice I

Details:
Date: March 29, 2023
Number of participants: 18

Objective:
Increase understanding regarding the financing of NBS projects in Brazil, promoting the exchange of experiences and understanding of challenges and lessons learned through the presentation of a practical example from the municipality of Sobral (CE).

Schedule:
The event was divided into two parts: (i) webinar open to the public, in which the Development Bank of Latin America and the Caribbean (CAF) and the municipality of Sobral discussed financing and presented details of the Sobral Socio-Environmental Development Program (Prodesol), from conception to implementation and maintenance; (ii) exclusive round table for Accelerator teams, focused on exploring the initiative presented.

NBS in Practice II

Details:
Date: July 19, 2023
Number of participants: 22

Objective:
Increase understanding regarding the financing of NBS projects in Brazil, promoting the exchange of experiences and understanding of challenges and lessons learned through the presentation of a practical example from the city of São Paulo (SP).

Schedule:
Presentation by the team that developed and coordinated the Gentileza Urbana program, in the city of São Paulo, covering details about the initiative’s conception, main challenges and solutions developed by the team. The event ended with a FAQ session.

Closing event of the Acceleration phase

Details:
Date: August 10, 2023
Location: Brasília (DF)
Number of participants: 33

Evaluation panel: Cristiana Scorza Guimaraens (Ministry of Cities); Henrique Evers (WRI Brasil); Pierre-André Martin (NBS Expert); Kesia Braga (Brazilian Development Association).

Institutions present at FinanCidades: Brazilian Development Association (ABDE); French Development Agency (AFD); Banco do Brasil; Brazilian Development Bank (BNDES); Regional Development Bank of the Brazilian Southern Region (BRDE); Caixa Econômica Federal; CDP; Desenvolve SP; Fundação Grupo Boticário; Global Fund for Cities Development (FMDV); FONPLATA Development Bank (FONPLATA); GIZ; Japan International Cooperation Agency (JICA); New Development Bank (NDB); Pró-Cidades program of the Ministry of Cities; Global Covenant of Mayors (GCoM).

Objective:
Bring together, in person, the teams from the ten projects to close the first phase of the Accelerator of NBS in Cities, with the presentation of the projects’ final pitch to financial institutions and potential partners.

Schedule:
The event was divided into two parts: (i) presentation and pitch of the ten projects that participated in the Accelerator of NBS in Cities to a panel made up of experts, followed by the announcement of the two projects selected for the second phase of the program; and (ii) FinanCidades: business round for urban projects, matchmaking event bringing together representatives of sustainable urban infrastructure projects and development finance institutions and potential partners.
APPENDIX G - PROJECT SELECTION CRITERIA FOR THE IMPACT PHASE

Based on the themes covered in the Acceleration modules, quantitative and qualitative indicators were established to evaluate the projects’ evolution and implementation viability. The final score for each of the ten projects was calculated based on the weighted sum of the criteria scores presented in Table 4. The two projects with the highest final scores were considered the most promising and selected for the Impact Phase of the Accelerator of NBS in Cities.

Table 4 | Criteria for selecting projects for the Impact phase

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation and attendance (Weight 2.5)</td>
<td>Presence of team participants in the mandatory activities of the Accelerator of NBS in Cities, including synchronous classes, the two monitoring meetings, the two cocreation hubs and the two NBS in Practice events. Timely delivery of the practical exercise and engagement of team members in the online teaching platform, including access to the content made available, were also considered.</td>
</tr>
<tr>
<td>Perception of projects’ quality throughout the Acceleration (Weight 2.5)</td>
<td>Assessment of mentors (70% weight in the criteria score): quality of the project at the end of each training session according to the mentor of that module. Evaluation of the Accelerator of NBS in Cities team (30% weight in the criteria score): bankability potential of projects at the end of the final training session.</td>
</tr>
<tr>
<td>Final project evaluation (Weight 5)</td>
<td>Evaluation of the pitch presented at the final event of the Accelerator of NBS in Cities by the evaluation panel (25% weight in the criteria score): average score assigned by the evaluation panel in terms of the clarity and coherence of the problem and proposed solution, clarity and assertiveness of benefits and impacts of the project, coherence of resources necessary for the execution and implementation of the project and maturity and implementation potential of the project. Assessment of the project’s final dossier by NBS experts (75% weight in the criteria score): quality of content and solidity of information regarding the Acceleration modules: NBS Techniques, Financial Structuring, Governance and Action Plan.</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors.
APPENDIX H – PROFILE OF THE TEN SELECTED PROJECTS

ÁGUAS DO CAPIVARA PROJECT – CAMAÇARI (BA)

Project’s leading entity
Secretariat of Urban Development and Environment (Sedur) of Camaçari’s municipal government

Other entities involved in the accelerated team
NGO Madrinhias and Association of Residents of the Parque Balneário Senhor do Bonfim Settlement.

Climate change has awakened many cities to the need to recover high environmental value areas that have already been urbanized. With Águas do Capivara, Camaçari proposes a different solution: the project aims to protect and restore 96 hectares of riparian forest along the Capivara River, encompassing five springs and eight kilometers of watercourse, before the onset of urban occupation.

The project foresees forest restoration measures including planting, fencing, signaling and installation of perches; social engagement, through the creation of the Capivara Management Group and the Capivara Network, environmental education actions and the promotion of annual forums; and knowledge production, with the preparation of the Capivara Water and Ecological Diagnosis and the Linear Park Urban and Executive Project.

Financial information
Estimated total cost of the project
BRL 1.58 million

About Camaçari
Population
304,302

MHDI
0,7

Relation SDGs

Diagnosis of the project’s maturity level

November 2022
August 2023
IPÊS PARK PROJECT – CAMPO GRANDE (MS)

Project’s leading entity

Municipal Agency for the Environment and Urban Planning (Planurb) of the municipality of Campo Grande

Due to the increase in impermeable areas, the Santo Antônio neighborhood is especially impacted by flooding resulting from intense rainfall and storms. The project envisages the implementation of nature-based solutions to redirect rainwater accumulated on public roads to a multifunctional urban park. By promoting the control of surface rainwater runoff, the park can minimize the effects resulting from flooding in the region, while providing landscape enhancement and a leisure space.

Among the proposed natural infrastructure solutions, the project includes a naturalized water retention basin, rain gardens, bioswales, rainwater beds and infiltration trenches. With an area of 12 hectares, the park will be a central spot for capturing and delaying the runoff of rainwater and will offer spaces for sports, cultural and leisure activities, as well as a gastronomic area for commercial activities.

Financial information

Estimated total cost of the project

BRL 62 million

About Campo Grande

Population

897,938

MHDI

0,784

Related SDGs
**VERDE URBANO PROJECT – ESTRELA (RS)**

Project’s leading entity

**Secretariat of Development, Innovation and Sustainability (Sedis) of the municipality of Estrela**

Estrela has been historically affected by flooding events, a problem accentuated by disorderly urbanization and an increase in intense rainfall resulting from climate change. Through drainage and afforestation plans and the implementation of NBS such as rain gardens, rainwater beds, bioswales and floating wetlands, the Verde Urbano project aims to mitigate problems related to drainage and heat islands and make Estrela a more sustainable and resilient city.

The implementation of the pilot project is focused on two areas: the higher altitude Centro neighborhood, to mitigate downstream flooding; and Parque Princesa do Vale, a lower area, to reduce flooding and improve the quality of the water that flows into the Taquari River. In addition to multiple climate and environmental benefits, Verde Urbano will promote community awareness and engagement.

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**Financial information**

Estimated total cost of the project

**BRL 1.37 million**

**About Estrela**

- Population: **34,669**
- MHD: **0.767**

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**Related SDGs**

1. *Zero Hunger*
2. *Clean Water and Sanitation*
3. *Climate Action*
4. *Life on Land*
5. *Clean Energy*
6. *Sustainable Cities and Communities*
7. *Safe Water and Sanitation*
8. *Life Below Water*
9. *Sustainable Cities and Communities*
10. *Sustainable Cities and Communities*
11. *Life on Land*
12. *Sustainable Cities and Communities*
13. *Sustainable Cities and Communities*
14. *Sustainable Cities and Communities*
15. *Sustainable Cities and Communities*
16. *Sustainable Cities and Communities*
17. *Sustainable Cities and Communities*
PIRAPORA PARK PROJECT – MARANGUAPE (CE)

Project’s leading entity

Secretariat of the Environment and Urbanism (Semurb) of the municipality of Maranguape

Other entities involved in the accelerated team

Department of Architecture, Urbanism and Design of the Federal University of Ceará (UFC)

The Pirapora River faces several socio-environmental problems resulting from unregulated urbanization, such as settlements in high-risk areas, pollution, flooding of homes and damage to biodiversity. To face these situations, the Pirapora Park project proposes the implementation of a set of NBS applied along the river’s infrastructure system.

With rain gardens, biofiltering gardens, evapotranspiration basins and biodigester pits, the project foresees the implementation of sustainable rainwater management, the revitalization of the Pirapora River, socio-environmental improvements in the micro-basin and improvement of the quality of the water that flows into the Maranguapinho River Dam, aiming to make it suitable for consumption, while recovering the adjacent urban space.

Financial information

Estimated total cost of the project

BRL 58.1 million
(Pilot: BRL 1 million)

About Maranguape

Population

131,677

MHDI

0,659

Financial information

Related SDGs

November 2022
August 2023
MULTIFUNCTIONAL NATURAL PARK IN VALLEY FLOOR AREAS – MARINGÁ (PR)

Project’s leading entity
Research and Urban Planning Institute of Maringá (Ipplam)

Despite its importance for biodiversity and resilience, the city’s valley floor has become an undervalued and difficult to manage area in Maringá. The project proposes the creation of a linear park that provides multiple functions to the area, in addition to environmental preservation. The park will establish green corridors that will promote the sustainable management of urban waters, reconnection of the surrounding areas with the park’s natural areas, access to open spaces for socially vulnerable populations, enhancement of ecosystems and increase in biodiversity.

The Ipplam project includes several nature-based solutions such as green routes for pedestrians and cyclists, revitalization of streams, rain gardens and sustainable rainwater management. The first stage consists of a pilot project with potential to be replicated throughout the municipality’s 830 hectares of valley floor areas.

Financial information

- Estimated total cost of the project: BRL 181.3 million

About Maringá

- Population: 409,657
- MHDI: 0,808

Related SDGs

BRL 181.3 million

- November 2022
- August 2023
SOCIAL HOUSING AND ENVIRONMENTAL RECOVERY OF HIGH-RISK AREAS – RAPOSOS (MG)

Project’s leading entity
Secretariat of State and Social Development (Sedese) of the state of Minas Gerais

Raposos is the municipality most vulnerable to climate disasters during the rainy season in the state of Minas Gerais, with 32.5% of its territory in high-risk areas for flooding and landslides. The Sedese-MG project aims to strengthen the municipality’s social housing policy, with the creation of a Resettlement Plan and a Social Housing Program associated with the recovery and renaturalization of high-risk areas through the establishment of a linear park and nature-based solutions.

Actions to mitigate risks associated with rainfall include the restoration of riparian forests and the creation of ecological corridors and retention basins. Implemented in the vicinity of the most affected neighborhoods, the project includes the creation of a social housing program to guarantee the right to safe housing for families in conjunction with the environmental recovery of these areas.

Financial information
Estimated total cost of the project
BRL 28.3 million

About Raposos
Population
16,501

MHDI
0,730

Related SDGs
SOCIO-ENVIRONMENTAL RECOVERY IN A HIGH-RISK AREA IN MORRO MONTE SERRAT – SANTOS (SP)

Project’s leading entity
Secretariat of the Environment (Semam) of the municipality of Santos

Other entities involved in the accelerated team
School of Vale do Ribeira Agricultural Sciences of São Paulo State University Júlio de Mesquita Filho (UNESP) and Civil Defense Department of the municipality of Santos (SP).

Santos is a highly urbanized coastal municipality with a high population density. The project will focus on five high-risk areas for landslides, where housing has already been removed. Through green interventions such as agroforestry systems, bioswales, rainwater beds and urban gardens, the project aims to mitigate the impacts of climate change already felt by the population.

The main pillars of the project focus on the environmental recovery and restoration of the region, using urban and social constraints. The population will be involved in the entire process, including the definition of measures with the Civil Defense Department, the construction of a community garden in an accessible location, and the enhancement of the area’s ecotourism vocation.

Diagnosis of the project’s maturity level

Financial information
Estimated total cost of the project
BRL 10 million

About Santos
Population
418,608

MHDI
0,840

Related SDGs
MONJOLINHO MULTIFUNCIONAL PARK
- SÃO CARLOS (SP)

Project’s leading entity
Federal University of São Carlos (UFSCar)

Other entities involved in the accelerated team
Municipal Secretariat of the Environment, Science, Technology and Innovation (SMMACTI) of the municipality of São Carlos and the Management Group responsible for the Monjolinho Dam

The increase in extreme weather events represents a risk for the dam located at the Federal University of São Carlos (UFSCar) and for people traveling in the area. The project aims to decommission the dam and implement a multifunctional linear park that will include the renaturalization of the watercourse and surrounding areas with the use of NBS.

The park’s functions will be to integrate the floodplain areas, recover the natural morphology of the Monjolinho Stream, recover the riparian forest, recover and expand the flooded area. Additionally, it will be part of an Open Spaces System planned for the municipality of São Carlos and will be a free, healthy and natural leisure option for the local population. Developed through a partnership between UFSCar and the municipal government, the project will serve as a model for similar decommissioning actions in the country and for teaching and research.

Diagnosis of the project’s maturity level

Financial information
Estimated total cost of the project
BRL 20 million

About São Carlos
Population
254,822

MHDI
0,805

Related SDGs
SENHORINHA RIVER PARK: FROM THE RIVER TO THE STREET – SÃO JOSÉ DOS CAMPOS (SP)

Project’s leading entity

Secretariat of Urbanism and Sustainability (Seurbs) of the municipality of São José dos Campos

The southern region of São José dos Campos is highly vulnerable and presents continuous demand for public education, health and leisure services. The project proposes the restoration of the Senhorinha Stream and the configuration of the surroundings of the Senhorinha River Park as a mosaic of projects for green and leisure areas in the region based on the improvement of existing public spaces, currently fragmented, and the creation of a systemic connection link between the river and the street.

The project provides infrastructure to support basic and recreational needs and strengthen the local economy. Green routes are also planned for cyclists and pedestrians, as well as community gardens, among other NBS and public facilities that will benefit populations in socio-environmental vulnerability situations.

Diagnosis of the project’s maturity level

Related SDGs

Financial information

Estimated total cost of the project

BRL 74.1 million

About São José dos Campos

Population

697,248

MHDİ

0,807
GREEN AND BLUE INFRASTRUCTURE SYSTEM – SOBRAL (CE)

Project’s leading entity
Secretariat of Urban Planning, Housing and Environment (Seuma) of the municipality of Sobral

Other entities involved in the accelerated team
Municipal Environmental Agency (AMA) of the municipality of Sobral

The Green and Blue Infrastructure System (IVA) foresees the creation of an interconnected and multifunctional system of green areas (such as squares, parks, gardens and public tree corridors) and urban waters, reconnecting the Serra da Meruoca to the Acaraú River, using NBS in conjunction with existing urban infrastructures.

The project covers three neighborhoods with high levels of vulnerability and seeks to reestablish natural systems that ensure the quality of urban life and promote more sustainable alternatives for sanitation, reduction of flood risks and improvement of rainwater infiltration. Urban resilience actions are also planned, including the restoration of riparian forests, recovery of springs and implementation of green corridors, retention basins, rain gardens and biofilter gardens, among other NBS.

Diagnosis of the project’s maturity level

Financial information
Estimated total cost of the project
BRL 66 million
(Pilot: BRL 8.3 million)

About Sobral
Population
217,569
MHDI
0.714

Related SDGs

November 2022
August 2023
REFERENCES


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