

# TOWARDS THE FINANCING OF THE BIODIVERCITY

Investment mechanisms for incorporating biodiversity in urban planning

The world's cities will become a key element in reversing the effects of climate change, as well as the damage to ecosystems and, consequently, their capacity to provide human well-being. This is what the conceptualization of BiodiverCities and their implementation is aimed at. Since the creation of the United Nations Environment Program (UNEP) in 1972, there has been significant institutional growth to promote environmental protection - climate change, preservation of ecosystems, environmental governance and "green" finance,<sup>1</sup> which has led to environmental problems becoming a priority on the global agenda. A key in this process has been encouraging investment strategies and policies, both public and private, to strengthen natural capital<sup>2</sup>.

Within this framework, the phenomenon of urban expansion acquires great importance due to its recognized impacts on nature (WEF

et al., 2022), its contribution to greenhouse gas (GHG) emissions, and the high risk of human and material damage that can stem from the resulting degradation of ecosystems. This situation requires urgent action, given that, as the United Nations<sup>3</sup> points out, 55% of the world's people live in cities today, and this proportion will increase to 68% by 2050. It is, therefore, a priority to accelerate climate mitigation and adaptation in cities, based on the preservation and restoration of their ecosystems and biodiversity, seen as a way to effectively address these challenges (WEF et al., 2022). It is a matter of adapting urban planning to environmental criteria and orienting investments towards natural capital. This is the reason for the scope that financing acquires, within the framework of the BiodiverCity concept, as a model for sustainable urban development.

In this sense, "Nature-based solutions" (NbS) are a key element that

has emerged in actions to protect, sustainably manage and restore natural or modified ecosystems around cities while at the same time being useful to enhance their benefits for human well-being. The BiodiverCity thus emerges as a concept around which investment should be prioritized through these types of solutions. The aim is to have greater possibilities to organize the urban territory, respond to the climate emergency and reduce its impact on biodiversity.

Designing and defining financing mechanisms to develop NbS projects in cities is already underway. However, these mechanisms must be accompanied by a public policy, which requires articulating several elements to promote their effectiveness. An important issue is guaranteeing the financing of investments, which can be a complex bottleneck in the case of LAC.<sup>4</sup> Despite this, the potential for investment in NbS projects exceeds US\$500 billion, generating more than

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## TYPES OF NBS FOR PRIORITY INVESTMENT OBJECTIVES IN LATIN AMERICA AND THE CARIBBEAN (LAC)

In a recent study by the Inter-American Development Bank (IDB) and the World Resources Institute (WRI), primary, secondary and tertiary investment objectives and up to three of the NbS implemented in 156 different projects were classified and analyzed across 129 broader initiatives in LAC. This made it possible to qualitatively establish the degree of applicability of each NbS option in relation to the priority challenges that different sectors may be facing. As a result, a relationship of NbS types was established against the most important investment objectives, especially those related to water quantity and quality, urban flooding, coastal erosion and flooding, landslide risk, and river flooding. The main types of solutions identified are related to the protection and recovery of different types of ecosystems and the development of agroforestry and silvopasture processes, good agricultural practices, bioretention systems, artificial wetlands, and urban parks, among others.

**Source:** Ozment, S. et al., 2021.

50 million jobs (WEF & Alexander von Humboldt Biological Resources Research Institute, 2022). In this sense, the operationalization of the BiodiverCity concept can provide an impetus to make these investments more viable. Thus, it is necessary to expand the financing of these actions, as well as the design and adoption of novel financial instruments, so that together with the traditional ones - public budgets, multilateral or local loans - they can guarantee "green" investments in those cities that seek a transition towards sustainability. All this is based on the protection, restoration, and sustainable use of their ecosystems and biodiversity.

This chapter presents possible mechanisms that can facilitate this financing, mainly focused on the case of LAC countries. Thus, it points out alternatives for NbS funding, both public and private, focused on strengthening the commitment made by BiodiverCities and their consequent

benefits in urban planning and management in the region. In addition, the information presented seeks to contribute in the creation of public policies that make viable the articulation of projects, the confluence of funds, and the efficient execution of other related public policies.

## GENERAL CONTEXT AND THE VALUE OF BIOLOGICAL DIVERSITY

The financing of projects that link biodiversity and the city, mainly supported by NbS, must consider that what is urban refers not only to that which is built. It must also recognize that biological diversity has an important capital value in these spaces, as it provides ecosystem services that are fundamental for the well-being of citizens. In other words, biological diversity is an asset equivalent to land surplus value.

These natural assets that should be valued within the concept of BiodiverCity are diverse and operate at different scales. They can be represented by protected areas, green zones, rivers, canals, wetlands, coastal areas, including flora and fauna found in these spaces, as well as water sources and food and energy supply areas, among others.

### TYOLOGIES OF INVESTMENTS IN NATURAL CAPITAL AND URBAN BIODIVERSITY

The investments that arise in this context are of different types in terms of components and technologies. Regarding the former, they correspond to the conservation or the partial or total recovery of ecosystems and green infrastructures. Regarding the latter, they cover two diffe-

rent areas: NbS and hybrid solutions (gray, combined with NbS).<sup>5</sup> These have great potential for contributing to sustainability and generating socio-environmental benefits.

In most cases, these NbS or combined investments correspond to public assets and should, therefore, be defined and operated mainly from that sector. However, there are some cases in which they are public assets or assets transferred to private parties. As far as possible, they should be provided by private parties or through agreements between the State and private or community entrepreneurs, through concessions or public-private partnerships (PPPs).

Urban-regional biodiversity is usually incorporated in this context through territorial planning and management instruments, which identify and define as determinants the different types of elements that are considered to provide fundamental ecosystem services. In the case of a country such as Colombia, for example, this occurs precisely with the Land Management Plans, under the figure of the *main ecological structure*. This instrument has three connotations of interest: (i) it can be a mandatory action framework for public environmental management and indicative of the private sector; (ii) it has a long-term validity; and (iii) the mandate is the responsibility of the State (whether at the municipal, regional or national level).

### INVESTMENT OPPORTUNITIES IN BIODIVERCITIES

According to Funds Society, for the World Economic Forum, more than half of the world's GDP is directly dependent on nature's goods and services. This means that a reduction in natural capital, resulting from the loss of biodiversity and the deterioration of renewable reserves, poses a real risk to companies, their profits,

and investors. This has been confirmed by recent research,<sup>6</sup> which shows that the positive impacts of investments in nature outweigh the costs that the economy would have to bear for the losses caused by the deterioration of ecosystems.

Biodiversity investments thus face two significant challenges. On the one hand, to adopt, as much as possible, NbS, for which financing mechanisms must be promoted, but targeted in a specific way. On the other hand, recognizing that these are medium- and long-term projects due to the very essence of the problems to be addressed. It is essential to point out that international experience shows that the way to promote NbS as the driving force of BiodiverCities requires the efforts of governments, international organizations, and multilateral financing agencies to channel resources toward a new generation of urban green infrastructure that includes NbS.

## FINANCING THE BIODIVERCITY: EXPERIENCES AND CHALLENGES

The financing of biodiversity management in projects to promote BiodiverCities based on NbS requires environmental policies and actions at global, national, regional, and local levels. These take the form of four main instruments: (i) planning; (ii) command and control; (iii) economics; and (iv) education, information, research, and citizen participation. The first refers to development plans, watershed plans, waste management plans, and land use plans, among others, which, as mentioned above, exist in practically all countries. The second is a matter of regulation and establishes specific standards or limits that economic

agents must comply with.<sup>7</sup> The third is based on using economic or market incentives to generate behavioral changes in agents. Finally, the fourth seeks to train, educate and inform society about relevant aspects of the environment.

### FINANCIAL SOLUTIONS FOR BIODIVERCITIES

Financial capital - or, more generically, finance - is an enabling asset because it enables the exchange of funds between legal entities or natural persons over time and makes investment for capital formation viable. When the object of financing is natural capital, it is often referred to as "green" finances or financing.

A *financing solution for biodiversity*<sup>8</sup> (BIOFIN - UNDP, 2018) is a financing mechanism, tool, option, and strategy (or some economic instruments) that facilitates financial flows for conservation, sustainable use, and equitable sharing of ecosystem benefits (see Box 2).

It is worth mentioning three aspects that can influence financing and investment in natural capital and NbS in a context of transformations such as those proposed by the BiodiverCities:

- 1 There is a current imbalance between public or private funding for investments in activities that are harmful to ecosystems and biodiversity - fossil fuels, agriculture, fisheries, mining, and infrastructure, among others - versus activities that enhance natural assets and promote sustainable use (Dasgupta, 2021).
- 2 In the case of private financing, the main concern is the uncertainty of the profitability of these investments, as they have a longer time to generate income flows. This reduces the attractiveness of projects by affecting the liquidity of these assets.

- 3 Conservation and restoration projects are generally inadequate in size for private investment.

Although the situation in this regard has improved, traditionally, financial markets do not adequately value biodiversity outcomes and avoid investing in NbS. This makes it necessary to establish incentives that particularly motivate institutional investors to consider the value of biodiversity assets, both in making funding decisions and in the process stimulating markets to channel investment from various stakeholders. Evidence from developments in the broader climate finance landscape indicates that this may be achievable, thanks to the considerable reduction in risk exposure and growing evidence of

the valorization of environmental assets as drivers of cities with better quality of life (WEF & Alexander von Humboldt, 2022).

The Cambridge Institute for Sustainability Leadership [CISL] (2021) recently published the manual and framework for identifying financial risks related to nature, allowing financial institutions to start integrating this issue into the main financial models, risk frameworks, and portfolio strategies. In any case, it is necessary to create the conditions and technical capacities in each country to structure projects that promote transformations in BiodiverCities at the feasibility level ("ready for investment"), in addition to policies that incorporate these projects into environmental



### FINANCIAL SOLUTIONS FOR BIODIVERSITY

Financial solutions for biodiversity are based on a combination of elements, including one or more financial instruments, sources of funding, key actors or intermediaries, beneficiaries or key stakeholders, and the desired financial outcome. The main elements of a financial solution are:

- Sources of financing on which the solution is based.
- The main agent or intermediaries in charge of managing the implementation of the solution.
- Instruments or mechanisms used to mobilize, raise, manage and disburse the corresponding financing, with strictly financial instruments such as bonds, shares, or tax and regulatory reforms.
- The desired financial results, including those related to: (i) avoiding future expenses; (ii) providing measures that improve cost-effectiveness and efficiency in budget execution, achieve synergies, align incentives and favor a more equitable distribution of resources; (iii) generating revenues; and (iv) realigning expenditures.
- Beneficiaries or stakeholders, i.e., the principal recipients who receive the funding or are the targets of the instrument.

Source: UNDP (2018).

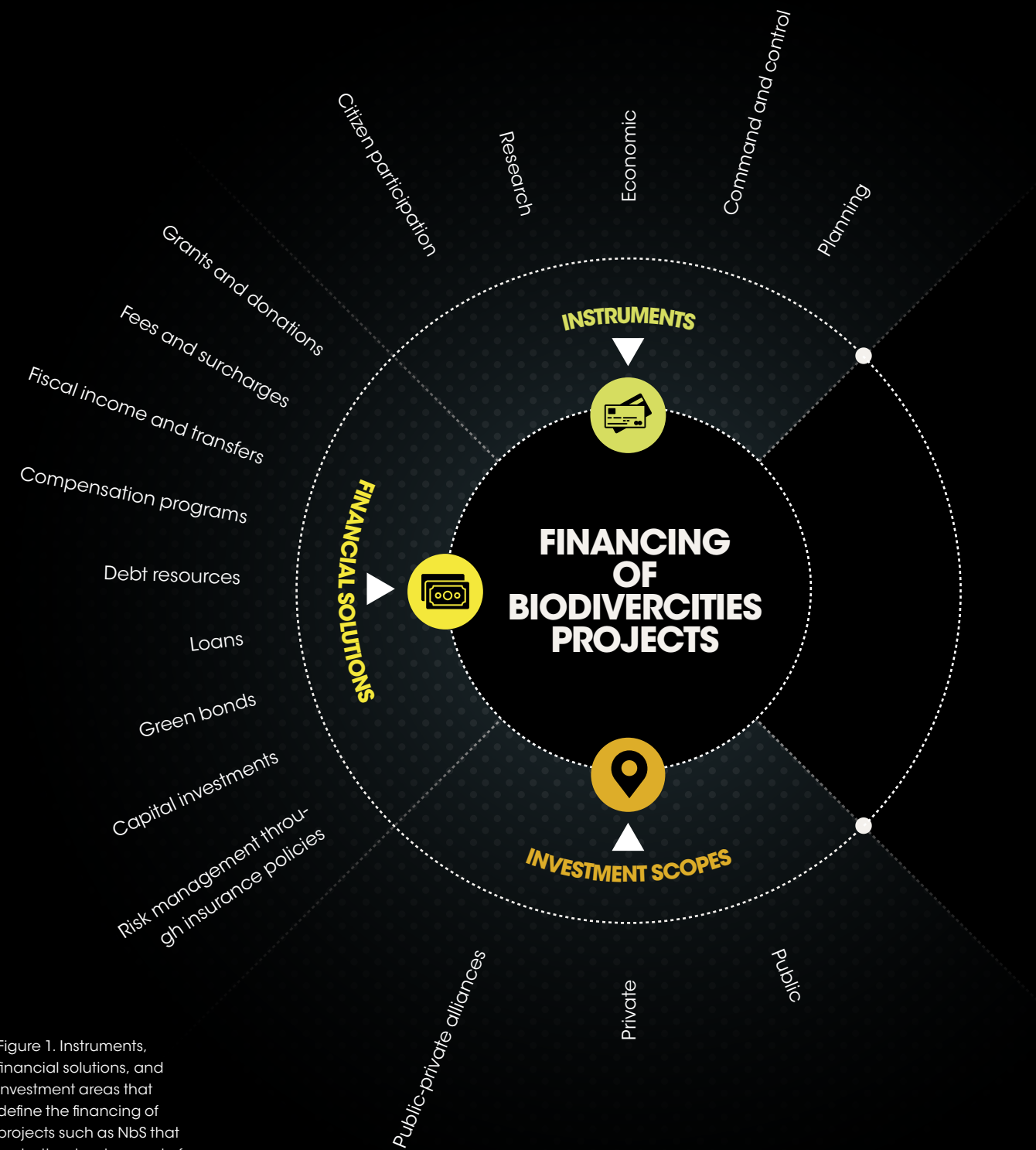


Figure 1. Instruments, financial solutions, and investment areas that define the financing of projects such as NbS that make the development of BiodiverCities viable.

Source: Prepared by the authors

planning. Specifically, their “bankability”<sup>9</sup> and “scalability”<sup>10</sup> should be sought to facilitate financing.

### NbS Funding Experiences

Investments that drive the transformations proposed by bio-green cities can be made by combining traditional interventions and NbS, especially in infrastructure. Recent experiences in the implementation and financing of these NbS demonstrate that they are a way to boost green infrastructure, in many cases in more cost-effective conditions. In addition, these NbS interventions allow recognizing a wide variety of instruments that are implemented in the projects’ financial solutions (Ozment et al., 2021).

The main NbS financing instruments identified in that context (according to Ozment et al., 2021) are:

- ➔ Grants and donations: these are the primary source of funding for NbS. They usually come from public entities or international or local foundations.
- ➔ Economic instruments: funds from fees and surcharges from public service providers, tax revenues, fiscal transfers, or revenues from compensation programs. These instruments bring together national and territorial public sources.
- ➔ Return-based instruments: debt resources, i.e., local or international loans from commercial or multilateral banks, green bonds issued by local or national governments, and equity investments such as private or public investment funds.<sup>11</sup>
- ➔ Risk management instruments: innovative scheme to mitigate project risk through insurance policies.
- ➔ Multi-source strategies: potential financing from a combination of grant sources; matching

funds and tax revenues or surcharges from specific public service providers; multilateral loans; and private investment, among others.

- ➔ Private financing: financing by public and private companies that are associated with the benefits derived from these investments.

### Public financial instruments for the BiodiverCity

In general, national or subnational governments allocate resources for financing and investing in biodiversity and green infrastructure. They do so through: (i) direct investments from the public budget, whose sources may be general revenues, debt, taxes, fees, or earmarked fiscal contributions; (ii) the creation of environmental incentives and regulations; and (iii) public-private partnership schemes, concessions, and other joint participation mechanisms.

In addition, public finance also has access to debt sources, such as multilateral credits, through green financing lines, and to the capital market, through green bonds. Likewise, the world’s green finance is supported bilaterally or multilaterally by both developed countries and multilateral development banks or agencies (Swann et al., 2021).

### Private financing

The international community recognizes that public funds alone are not, and will not be, sufficient to ensure that current trends in biosphere degradation slow down. For this reason, as in the public sector, private investments have access to instruments such as green bonds, sustainability-linked loans, private equity funds in support of biodiversity, environmental impact bonds, and other insurance products for

activities that enable the conservation, restoration, and sustainable use of nature.

This market is expected to see an increase in the issuance of green bonds, social bonds, sustainable bonds, blue bonds, and all bonds of a similar nature related to sustainable development spending by national or subnational governments and the private sector.

## STRATEGIES FOR THE FINANCING OF BIODIVERCITIES

The BiodiverCities initiative is an appropriate and timely global response to ensure sustainable urban-regional development, as it takes into account the challenges and opportunities provided by biodiversity as a cornerstone within urban planning processes. The reintegration of local ecosystems in these processes, mainly with green infrastructure, will lead to improved quality of life in cities.

In the short and medium-term, the formulation and financing of these programs should be guided by strategies that minimize structural obstacles and difficulties. As an initial approach, the following are some ideas that seek to promote the financing of the projects proposed by the BiodiverCities (Figure 2):

### STRATEGY 1. DEVELOP A GREEN BOND PACKAGE TO FINANCE ECOLOGICAL NETWORKS AND GREEN INFRASTRUCTURE AS AN ARTICULATING AXIS

Provide a secure financial mechanism at the national and regional level that allows the sustainability of ecological networks and green in-

Figure 2. Strategies to promote the financing of projects that can make BiodiverCities more dynamic and viable.

## DEVELOP FINANCIAL MECHANISMS

Develop financing mechanisms (e.g. green bonds) aimed at promoting projects that boost the urban-regional link with biodiversity and its ecosystem services.

## PROMOTE SEED CAPITAL

To explore financial support that catalyzes interventions at a small and medium scale in the short term.

## ARTICULATE POLICIES AND INSTRUMENTS

Comprehensively review and articulate financial policies and instruments in order to optimize their resources and enhance investment efficiency.

## PROMOTE GREEN FINANCE

Promote public investment primarily aimed at developing projects (e.g. NbS) that allow planning and managing biodiversity in the urban-regional sphere.

infrastructure as the articulating axis of the BiodiverCity projects, guaranteeing the connection of the elements of urban-regional development with the biodiversity of the cities and their ecosystemic services in a comprehensive manner. This will facilitate the formulation and structuring of subprojects and their financing. These green infrastructure networks could be strengthened in areas where precedents of green bonds for air pollution control, environmental education, and NbS, among others, already exist.

### STRATEGY 2. EXPLORE THE CREATION OF A CATALYTIC FUND FOR BIODIVERCITIES

It can be achieved through a partnership between the three levels of government and multilateral agencies to obtain a financial base and provide

capital for projects within the initiative. This may include results-based financial support such as green conservation bonds, watershed restoration, or water quality improvements. Such a strategy could facilitate financing for small-to-medium-scale interventions.

### STRATEGY 3. ARTICULATION BETWEEN ENVIRONMENTAL MANAGEMENT POLICIES AND INSTRUMENTS

It is essential to properly articulate environmental management policies and instruments and financing schemes following new trends in financial markets, private investment, tax revenue possibilities, and international cooperation modalities. In this regard, a comprehensive review of all environmental policy instruments, particularly those related to biodiver-

sity, should be carried out. The use of existing environmental fiscal resources should be optimized, and mechanisms should be redesigned to improve the efficiency of public spending.

### STRATEGY 4. PROMOTION OF GREEN FINANCE

The budgetary and financing instruments available for public investment should be, as a priority, oriented towards biodiversity projects and should be advanced mainly at the urban-regional level, specifically through NbS projects with a medium-term vision. Likewise, greater public budget allocations at different scales should be earmarked for NbS projects, whose bankability has been previously demonstrated not only in direct economic benefits but also through the monetization of natural capital assets.

The strategies presented seek to propose an urban planning model that considers natural capital assets a cornerstone for a socially just and economically viable urban transformation based on the protection, restoration, and sustainable use of ecosystems and biodiversity related to urban centers. The approach to the necessary changes in the regulatory framework, public policy, and financial institutions seek precisely to reorient the financing process in order to reflect the real cost of nature and its importance for the future of cities.

What follows are a series of recommendations and the key messages that emerge from the perspectives, tools and financing instruments to catalyze biodivercities.

➔ To make the BiodiverCity viable, it is necessary to define and implement public policies that

favor the preservation and recovery of biodiversity in cities.

➔ Regulatory environments and institutional arrangements must be created - at municipal, regional and national levels - that favor investments in these projects and state and/or private financing. These are vital elements to consolidate the public policy of a BiodiverCity.

➔ To guarantee the BiodiverCity, it is essential to articulate environmental management policies and instruments and financing schemes according to new trends in financial markets, private investment, tax revenue possibilities, and international cooperation modalities.

➔ The strengthening of green finance, the diversification of financial instruments and local and international aid, and mar-

ket access facilities should be part of the plan for the construction of the BiodiverCity.

### KEY MESSAGES

➔ **Create innovative municipal budgets focused on incentivizing green infrastructure and Nature-based Solutions.** Explore this through channeling and integrating funds from different government sources, green infrastructure projects, and, specifically, NbS.

➔ **Encourage the creation of natural capital funds and NbS projects at the municipal level.** Define and consolidate an implementing agency to finance NbS projects focused on nature, biodiversity, and ecosystemic adaptation to climate change in cities. This fund could explore various direct or indirect forms of financing.