Guide to Biodiversity Financing for Cities and Regions

ICLEI Local Governments for Sustainability

TAP Transformative Actions Program

INTERACT-Bio Integrated action on biodiversity

Supported by:

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

IKI INTERNATIONAL CLIMATE INITIATIVE

based on a decision of the German Bundestag

ABOUT INTERACT-BIO

The INTERACT-Bio project is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and Consumer Protection (BMUV) through the International Climate Initiative (IKI). INTERACT-Bio, led by ICLEI, is designed to improve the utilization and management of nature within fast-growing cities and the regions surrounding them. It aims to provide expanding urban communities in the Global South with nature-based solutions and associated benefits.

ABOUT TRANSFORMATIVE ACTIONS PROGRAM (TAP)

The Transformative Actions Program (TAP) is a global initiative led by ICLEI to support local and regional governments transform their low-emission and resilient development infrastructure concepts into mature, robust and bankable projects ready for financing and implementation.

ABOUT ICLEI – LOCAL GOVERNMENTS FOR SUSTAINABILITY

ICLEI – Local Governments for Sustainability is a global network working with more than 2,500 local and regional governments committed to sustainable urban development. Active in 125+ countries, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development. ICLEI's Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

AUTHORS

ICLEI World Secretariat

Dr Eszter Mogyorosy
Cecilia Rivera
Beatriz Fonseca

COLLABORATORS

ICLEI World Secretariat

Sunandan Tiwari
Thibault Renoux
Ariel Dekovic
Haris Rizvanski

ICLEI South American Secretariat

Sergio Aranguren
Marilia Israel

ICLEI Africa Secretariat

Ingrid Coetzee
Ursula Wellmann
Nikara Mahadeo

DESIGN

Olga Tokareva, *ICLEI World Secretariat*

CITATION

This publication should be cited as: "ICLEI - Local Governments for Sustainability, 2023. Guide to Biodiversity Financing for Cities and Regions. Bonn, Germany".

CONTACT

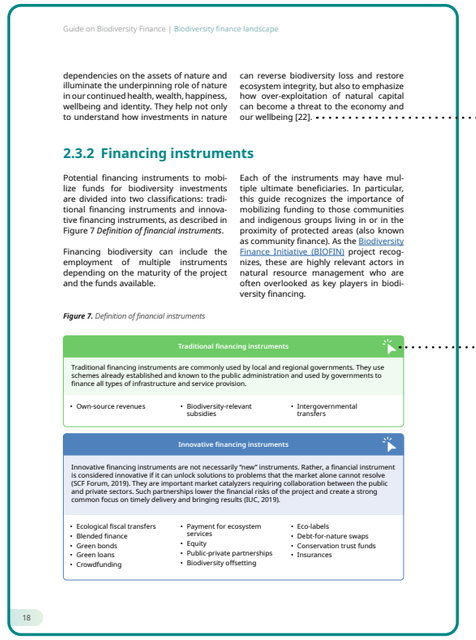
ICLEI – Local Governments for Sustainability e.V.
Kaiser-Friedrich-Str. 7
53113 Bonn | Germany
Tel. +49-228 / 97 62 99-00
www.iclei.org

Contents

Acronyms

CSO	civil society organizations
DFI	Development Finance Institution
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EFT	Ecological fiscal transfer
EIB	Environmental Impact Bonds
ESG	Environmental, social and governance [investing]
GEF	Global Environmental Facility
GBF	Kunming-Montreal Global Biodiversity Framework
GBP	Green Bond Principles
GHG	greenhouse gas emissions
LBSAP	Local Biodiversity Strategies and Action Plans
LRG	local and regional governments
MDB	Multilateral Development Bank
NBE	nature-based enterprises
NBI	Nature Built Infrastructure
NbS	Nature based Solutions
NBSAP	National Biodiversity Strategies and Action Plans
NCFF	Natural Capital Financing Facility
NGO	non-governmental organizations
ODA	official development assistance
PES	Payment for ecosystem services
PFS	pay-for-success
PPP	Public-Private Partnership
SDGs	Sustainable Development Goals
SEP	stakeholder engagement plan
SFN	State of Finance for Nature report
TNFD	Taskforce on Nature-related Financial Disclosures
TUF	tourism user fees
UNEP	United Nations Environment Programme

How to use this guide



Guide on Biodiversity Finance | Biodiversity finance landscape

dependencies on the assets of nature and illuminate the underpinning role of nature in our continued health, wealth, happiness, wellbeing and identity. They help not only to understand how investments in nature can reverse biodiversity loss and restore ecosystem integrity, but also to emphasize how over-exploitation of natural capital can become a threat to the economy and our wellbeing [22].

2.3.2 Financing instruments

Potential financing instruments to mobilize funds for biodiversity investments are divided into two classifications: traditional financing instruments and innovative financing instruments, as described in Figure 7 *Definition of financial instruments*.

Financing biodiversity can include the employment of multiple instruments depending on the maturity of the project and the funds available.

Each of the instruments may have multiple ultimate beneficiaries. In particular, this guide recognizes the importance of mobilizing funding to those communities and indigenous groups living in or in the proximity of protected areas (also known as community finance). As the Biodiversity Finance Initiative (BIOFIN) project recognizes, these are highly relevant actors in natural resource management who are often overlooked as key players in biodiversity financing.

***Figure 7**, Definition of financial instruments*

Traditional financing instruments

Traditional financing instruments are commonly used by local and regional governments. They use schemes already established and known to the public administration and used by governments to finance all types of infrastructure and service provision.

- Own-source revenues
- Biodiversity-relevant subsidies
- Intergovernmental transfers

Innovative financing instruments

Innovative financing instruments are not necessarily "new" instruments. Rather, a financial instrument is considered innovative if it can unlock solutions to problems that the market alone cannot resolve (SCF Forum, 2019). They are important market catalyzers requiring collaboration between the public and private sectors. Such partnerships lower the financial risks of the project and create a strong common focus on timely delivery and bringing results (IUC, 2019).

- Ecological fiscal transfers
- Blended finance
- Green bonds
- Green loans
- Crowdfunding
- Payment for ecosystem services
- Equity
- Public-private partnerships
- Biodiversity offsetting
- Eco-labels
- Debt-for-nature swaps
- Conservation trust funds
- Insurances

18

References

Brackets [X] with a number inside refer to the list of references.

Navigation/Resource download or access

When you see this icon, you can click to download / access the related resource online, or to navigate through the Guide.

Tourism user fees

Revenues generated from tourism-based activities and used to support biodiversity conservation efforts are known as tourism user fees (TUFs). Depending on the activities, TUFs can be divided into different categories, namely [27]:

- **Entrance Fees:** fee charged to visitors to have access to protected areas or ecotourism sites (e.g. fees collected at entry gates).
- **Concession Fees:** companies that provide services within the site are charged a fee to operate or are mandated to share revenues (e.g. operation of souvenir shops and restaurants).
- **Licenses or Permits:** companies or individuals that intend to carry out activities that require supervision or special guidance to ensure the proper management of natural resources or that such activities do not harm the environment (e.g. hiking permits, sport fishing permits, licenses for cruise ship visits).
- **Tourism-based taxes:** wide range of fees and taxes charged on specific items on the tourism chain that are earmarked for nature conservation (e.g. taxes on hotel facilities, airport use, road tolls).

CASE STUDY

Beneficiary pays: Investment case for the rehabilitation of the Dar es Salaam Botanical Garden

The city of Dar es Salaam, Tanzania, in its efforts to improve the use and management of nature in the city and to attract tourists, has decided to rehabilitate the Botanical Garden.

The Botanical Garden contributes to the conservation and rehabilitation of indigenous plants, improvement of the air quality in the inner city, sequestration of carbon, and increase of the awareness of the importance of urban biodiversity, among other benefits. During the preparation of the investment case and based on the principle of "Beneficiary Pays", the residents of Dar es Salaam, Tanzania's domestic tourist and foreign tourist were identified as potential stakeholders to provide funding through entrance fees. Tanzanian nationals would pay a discounted fee in comparison to foreign visitors. The rehabilitation plan includes the creation of spaces to sell food, which could represent another channel to generate income by providing concessions to operate the food court [28].

Image: The Botanical Garden in Dar es Salaam City Centre ©IEUBI Africa & ICLEI CBC, 2020

21

Case study

The guide provides real world examples of financial instruments being used for biodiversity projects.

1 Introduction

1.1 Biodiversity and urban development

Cities are home for more than half of the global population and urban areas are expected to grow by an additional 2.5 billion people by 2050 [1]. This trend toward greater urbanization can be seen in all regions of the world but is most pronounced in Latin America and the Caribbean, where more than 80 percent of the population now live in urban areas. This rapid urbanization has had devastating impacts on nature and biodiversity leading to extinction of species. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [2], urbanization is one of the key drivers of biodiversity loss, with 25% of plant and animal species threatened by the effects of intense urbanization, and around 1 million species already facing extinction.

Throughout the years, human intervention and overexploitation of natural resources to achieve economic and political goals have caused unprecedented losses of biodiversity. This biodiversity loss represents a serious threat to the global economy. Cities, however, have the opportunity to build with and invest in nature, which can provide valuable benefits and lead to multiple economic benefits, such as job creation and increased business value chains. For instance, Nature-based Infrastructure (NBI) is more resilient to climate impacts than conventional, so-called “grey” infrastructure, while also contributing to the economy by creating jobs and new assets in sectors such as tourism and agriculture. NBI provides cost-effective and climate-resilient infrastructure solutions by avoiding costs in relation to extreme weather events over the time, which makes it an important strategy for tackling the infrastructure investment gap [3]. Massive infrastructure investments and adaptation efforts are required for sustainable, low-emission, and climate resilient development. Today more than USD 1 trillion is missing each year for urban investments; and the needs, for the coming decades, are projected to amount to several trillion dollars [4].

Monetizing biodiversity is difficult, but in practice, it is an asset that provides a set of relevant services with economic and social benefits. Unlike other assets, biodiversity has no ownership, which makes it challenging to assign a market value. On the other hand, biodiversity cannot be fully replaced when lost or damaged, which enhances the importance of protecting it.

Biodiversity can create truly resilient communities. Restoring and protecting ecosystems is a cost-effective way of building resilience and the ability to adapt to the physical impacts of climate change [5]. Given this, financing biodiversity should become a global priority.

The Kunming-Montreal Global Biodiversity Framework (GBF), adopted during the fifteenth meeting of the Conference of the Parties (COP 15) following a four year consultation and negotiation process is a historic Framework, which supports the achievement of the Sustainable Development Goals and builds on the Convention’s previous Strategic Plans, sets out an ambitious pathway to reach the global vision of a world living in harmony with nature by 2050 [6]. To implement it effectively demands ambitious and widespread use of biodiversity policy instruments and other measures to promote

sustainable patterns of production and consumption. Target 19 calls to substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans, by 2030 mobilizing at least 200 billion United States dollars per year.

1.2 Summary and purpose of the Guide

This Guide aims to serve as a one-stop-shop for local and regional governments (LRGs) to enable the development of urban biodiversity projects. The guide will also address access to finance for these projects. Through a structured collection of **definitions, case studies and resources,** this Guide helps LRGs to navigate and understand which **funding sources** are available and the most commonly used **financing instruments** (see Figure 1 on the right) to support **biodiversity conservation, maintenance, restoration and preservation** through nature-smart production practices, nature-based solutions, etc.

While the Guide recommends the use of a mix of funding sources and instruments, the application of each instrument will depend on the context and capacities of each city.

The Guide also details the stages of the **project development cycle**, explaining the necessary activities undertaken in each stage. The success of mobilizing funding for biodiversity investments depends on the bankability of the project, the inclusion of relevant stakeholders, and the development of business models. This process guides LRGs through these important steps.

Figure 1. *Traditional and innovative financial instruments explained in the guide*

Traditional financing instruments

- Own-source revenues
- Biodiversity-relevant subsidies
- Intergovernmental transfers

Innovative financing instruments

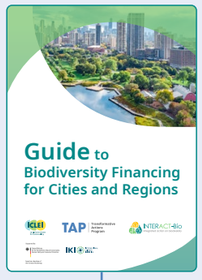
- Ecological fiscal transfers
- Blended finance
- Green bonds
- Green loans
- Crowdfunding
- Payment for ecosystem services
- Equity
- Public-private partnerships
- Biodiversity offsetting
- Eco-labels
- Debt-for-nature swaps
- Conservation trust funds
- Insurances

The Guide is complemented by the **"Biodiversity Finance Decision-Making Tree"**, which helps local and regional governments to find the most suitable financing instrument for their project, taking into consideration the required conditions.

After reading the Guide local and regional governments will be better positioned to develop finance-ready projects and decide which are the most suitable options for them.

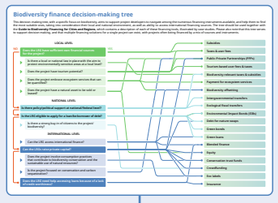
Finally, the **"Catalog of Financing and Technical Assistance Opportunities for 2023 - 2024**" aims to support LRGs to better understand and navigate in the financing architecture relevant to biodiversity finance.

Figure 2. *Interconnection and main purpose of the materials developed under the umbrella of INTERACT-Bio*



Guide to Biodiversity Financing for Cities and Regions

Using in-depth definitions, case studies and resources, the Guide covers innovative and traditional financing instruments to support biodiversity conservation, maintenance, restoration and preservation.



Biodiversity Finance Decision-Making Tree

With a specific project in mind, readers can explore the options for financing through the Biodiversity Finance Decision-Making Tree.

Catalog of Financing and Technical Assistance Opportunities for 2023 - 2024

The Catalog also offers available global opportunities for financing biodiversity projects.

2 Biodiversity finance landscape

2.1 Definition, trends, overview

Biodiversity encompasses the diversity among living organisms, species and ecosystems, and plays a key role in the provision of ecosystem services[1] [7].

Various initiatives are underway to improve the assessment, tracking and reporting of biodiversity finance flows and estimate the existing funding gap. Nevertheless, data gaps and inconsistencies persist. Estimating private finance is particularly challenging, because private actors do not typically monitor and report their biodiversity expenditure [8].

Biodiversity finance can be defined as all practices to raise capital, actions to manage funds, and expenditures that aim to contribute to the conservation, sustainable use and restoration of biodiversity [8], [9].

The 2022 State of Finance for Nature report [10], jointly authored by the United Nations Environment Programme (UNEP) and the Economics of Land Degradation, estimates that by 2050 around USD 11 trillion are needed to be invested in biodiversity to limit climate change to 1.5° and USD 9.5 trillion in a 2°C scenario. Annually, the investment needed by 2050 is USD 384 billion. This is more than double the USD 154 billion that is currently invested. Of today's investments, 83% is through public funding and 17% through private financing.

Given the huge gap between funds required for and funds invested in biodiversity conservation backed by nature-based solutions, new biodiversity financing is of immediate and great importance [9].

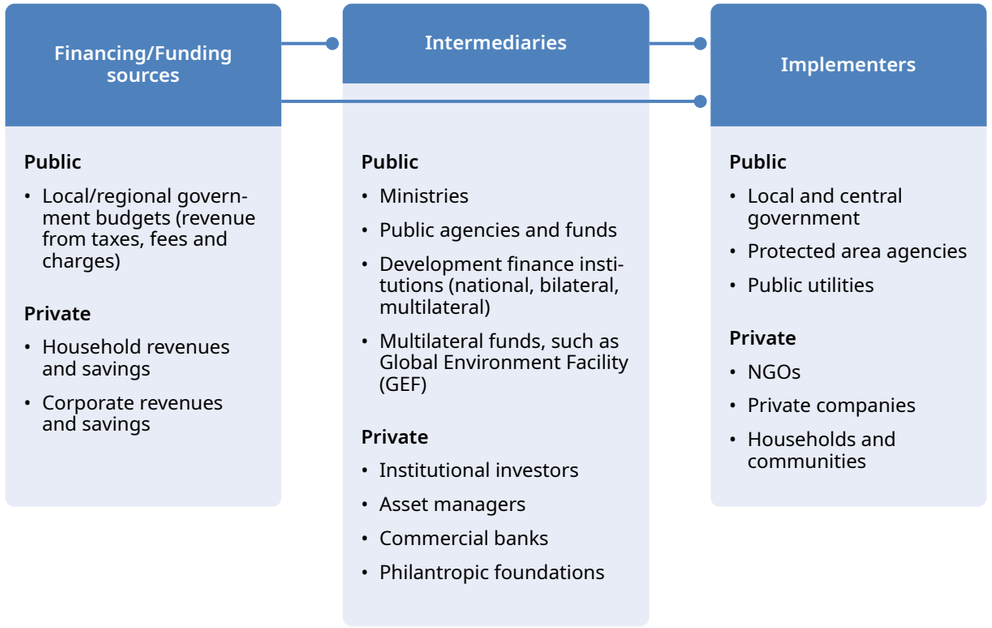
2.2 Actors and sources

Biodiversity finance stems from both public and private sources, and may be channeled through intermediaries such as public finance institutions and private asset owners and managers.

Currently, biodiversity finance, to a large extent, is dependent on funds from governmental agencies and private philanthropies [9]. Public sector biodiversity conservation financing has represented over 80% of the available financial resources and is implemented chiefly through domestic public budgets and fiscal policies to monitor impacts on ecosystems [11]. Figure 3 *The biodiversity finance landscape* illustrates the most typical actors of each of these categories.

1 Provision of clean water, food, raw materials, cultural and spiritual benefits, regulation of the climate and diseases, carbon sequestration, flood protection, etc.

Figure 3. *The biodiversity finance landscape*



Source: OECD, 2020 [8]

2.2.1 Public sector

Due to its perceived limited revenue potential, biodiversity finance is much more dependent on public funds, when compared to other climate-related activities, such as the transportation services. In practice, the public sector is essential not only in creating opportunities to attract private investment, but also in mobilizing or reallocating its own resources and revenues e.g. via direct investments or taxes.

Governments, development finance institutions, and climate funds (see Figure 4 *Sources of public finance*) can provide concessional finance, guarantee and catalytic capital to projects through multiple means such as grants, green and conservation bonds, credit facilities, and blended finance mechanisms (such as a mix of public and private funds through common investment schemes).

Figure 4. *Sources of public finance*

2.2.2 Private sector

Private finance can be a powerful tool for financing biodiversity projects by providing capital for conservation efforts in developing countries. The private sector can help to support sustainable development initiatives that can benefit both local communities and biodiversity, and to incentivize private sector investment in biodiversity conservation projects.

The role of private finance is not only as a provider but also as innovator, starting with the creation and promotion of innovative financial instruments and technology, and its capacity to mobilize its expertise to bear on conservation efforts.

To meet biodiversity targets set out in National Biodiversity Strategies and Action Plans (NBSAP) and Local Biodiversity Strategies and Action Plans (LBSAP), it is necessary to mobilize massive capital investments. These investments cannot be met by public sources of financing alone. Bringing in investments from the private sector is critical. In accordance with the GBF's targets, increasing financial resources from private sources requires the promotion of blended finance and the implementation of strategies and instruments (e.g. impact funds, bonds) that encourage the private sector to invest in biodiversity [12]. In particular, it is important to highlight that in many countries, private businesses and households own or lease large areas of land, thus, private capital has a fundamental role in managing and financing biodiversity [8].

The private sector spends an estimated USD 6.6-13.6 billion per year for biodiversity, which includes expenses on biodiversity offsets, sustainable commodities, forest carbon finance, payments for ecosystem services, water quality trading and offsets, philanthropic spending, private contributions to conservation NGOs, and private finance leveraged by bilateral and multilateral public development finance [8].

In recent years, there has been a rapid increase in investments that take into account environmental, social and governance (ESG) investing in their decision-making. Corporations increasingly provide financial resources through grants and donations.

National and Local Biodiversity Strategies and Action Plans

NBSAP

Article 6 of the Convention on Biological Diversity states that each Contracting Party shall, in accordance with its particular conditions and capabilities:

- Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity
- Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

LBSAP

A Local Biodiversity Strategy and Action Plan (LBSAP) is a guiding strategy, complemented by specific actions and adopted by local governments to achieve optimal and realistic governance and management of biodiversity and ecosystem services. An LBSAP is essentially the local equivalent of a National Biodiversity Strategy and Action Plan, which is the primary instrument use by national governments for implementing the Convention on Biological Diversity (CBD).

Sources: CBD, ICLEI CBC

Businesses are beginning to appreciate their dependence and impacts on nature, and leading companies realize the risks and opportunities associated with a better incorporation of nature into business models and operations [1]. Private sector investments related to nature are increasingly in the spotlight. A clear example of this is the newly established Taskforce on Nature-related Financial Disclosures [13]. This framework focuses on climate risk management and information disclosure as a route to create economic systems where nature is protected not exploited. Its final goal is to ensure that companies understand and effectively communicate to the financial community the dependencies, impacts, risks and opportunities related to nature. Sustainable supply chains are a popular investment destination for private finance. These include sustainable forest products, sustainable agricultural products, sustainable fisheries and seafood products and sustainable palm oil.

In recent years the term nature-based enterprises (NBE) emerged to define enterprises that use nature either directly or indirectly. It consists of for-profit or non-profit companies, organizations or initiatives engaged in economic activity that contribute to the development and delivery of NbS. Nature may be used directly by growing, harnessing, harvesting, or restoring natural resources in a sustainable way and/or indirectly by contributing to the planning, delivery or stewardship of NbS. NBEs contribute to biodiversity net gain and are usually small companies motivated by environmental goals [15].

However, the mobilization of private finance requires LRGs to consider important elements that will enable the space for such transactions, such as: the creation of financial incentives, new investment strategies and products (e.g. subsidies, tax, credits, disaster-risk insurance, green bonds) to encourage private investment in biodiversity; assessing and reforming the legal framework that regulate schemes involving the private sector; and the willingness to explore the use of innovative financial instruments and not rely on traditional instruments as grants [16], [17].

There are two main strategies to mobilize private finance for biodiversity:

- **financing green,** which involves increasing return by better monetizing cash flows, or
- **greening finance,** increasing positive impact by better internalizing environmental and social risks and benefits [16].

Additionally, the World Bank [16] suggests five ideas that can contribute to mobilizing private finance dedicated to biodiversity protection and conservation:

CASE STUDY

Private finance used to fund sustainable agriculture

Mirova, is a French company specializing in ESG investment management. They launched the "Land Degradation Neutrality Fund" and raised about USD 200 million from institutional investors as well as public funds including the European Investment Bank, Agence Française de Développement, the British Government, and the Canadian Government.

Private investors account for 60% of total funding, which will be invested in sustainable agriculture in developing countries.

Crops will include sustainable coffee, cocoa, timber and fruit through restoration of deforested areas. The fund evaluates any impacts in terms of its contribution to climate change countermeasures (mitigation and adaptation), rural development, gender equality and biodiversity conservation [14].

Image by ©alisonhancock, Adobe Stock

Figure 5. *Five big ideas to mobilize private finance for biodiversity*

1. **Environmental fiscal reforms**
   Governments could include the reforms as part of crisis recovery plans. Reforming agricultural subsidies and Land ownership has the largest potential impact.
2. **National data provision**
   Governments can support the integration of biodiversity criteria in financial sector decision making by adopting natural capital accounting practices and providing relevant data as a public good.
3. **Establish the Task Force for Nature-Related Financial Disclosure**
   The initiative will provide a framework and guidance for regulating and supporting biodiversity reporting and risk assessment by real and financial sector firms.
4. **Establish a 'Nature Action 100'**
   Investors could come together to identify the top 100 companies with the greatest negative impact on nature to drive changes in real sector corporate behavior - including greening of supply chains.
5. **Aggregate projects**
   Municipal Development Banks (MDBs) and governments can mobilize private investment for biodiversity goals by serving as cornerstone investors and providing catalytic capital to funds and other financial instruments that aggregate projects.

Source: World Bank, 2020 [16]

Image by ©paulaphoto, Shutterstock

2.3 Financing Biodiversity

2.3.1 Natural capital and valuing biodiversity

A capital is a resource or asset that stores and provides value to people. When invested and managed responsibly, the asset creates value. Natural capital consists in approaching nature as an asset ("capital"). When this happens, nature can interact with other assets that are central in financial-economic and corporate decision making such as financial, social and human capital. According to Natural Capital Coalition [18], natural capital is the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that yield a flow of benefits to people. Hence, nature is seen as an investment, rather than a cost. However, conceptualizing nature as an asset requires first to place a value on it.

The value of biodiversity lies not only in its very existence, but also in the fact that it provides numerous ecosystem services, which have an economic value and importance for humans [19]. As OECD describes [19], the process of valuation consists in two major steps: the demonstration of value and the quantification of value. First, the demonstration of value is about the benefits of the ecosystem services, considering also how they are distributed (local, national or global scale). This information can be used as the baseline to create payment plans for land users, which will lead to biodiversity conservation being accurately valued by the market compared to the financial incentives of land-use development.

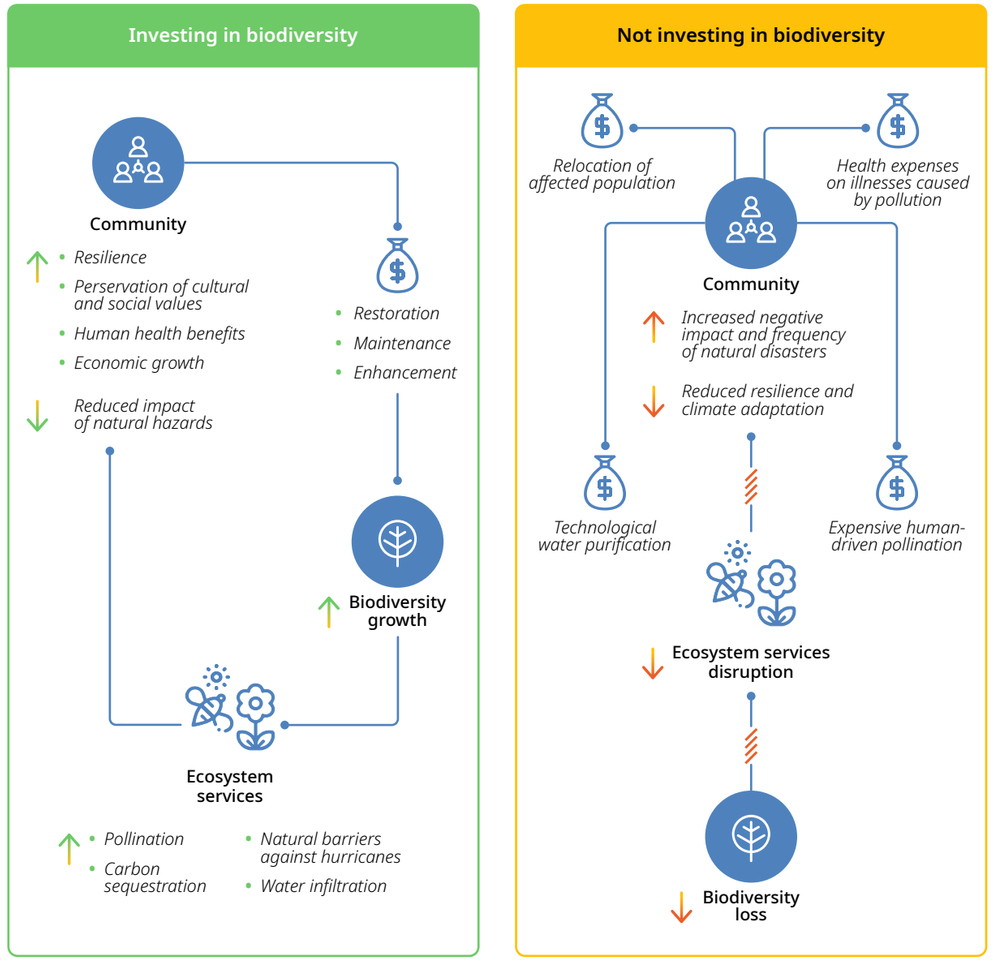
The quantification of the value of biodiversity can be done from different perspectives, including:

- the direct contribution to human health;
- as a source of human enjoyment;
- as a provider of goods and services; and
- the value biodiversity has from its existence and intrinsic value [20].

The economic valuation of biodiversity depends on the type of use and interaction with environmental resources and services [19], [21]. While these value estimates involve a certain degree of complexity, framing nature as a capital asset makes it easier to mainstream biodiversity into decision-making processes across all sectors of society to ensure its conservation, maintenance, enhancement, and restoration. Biodiversity is, then, presented as an asset that enables them to be more resilient.

Investing in biodiversity is possible by investing in more and better ecosystem services, which is a more cost-effective measure in the medium and long term (see the example in Figure 6).

Figure 6. *Cost-benefits on investing in biodiversity versus negative effects and expenses when not investing in biodiversity*



Failure to invest in biodiversity leads to expensive measures to compensate for the loss of ecosystem services. Instead of protecting populations, these measures merely rescue them from disasters and hazards that they are more susceptible to. For example, the absence of ecosystems reduces the barriers against natural disasters, resulting in greater damage to the surrounding communities.

Natural capital approaches provide decision makers with the tools needed to identify, measure and value impacts and

dependencies on the assets of nature and illuminate the underpinning role of nature in our continued health, wealth, happiness, wellbeing and identity. They help not only to understand how investments in nature can reverse biodiversity loss and restore ecosystem integrity, but also to emphasize how over-exploitation of natural capital can become a threat to the economy and our wellbeing [22].

2.3.2 Financing instruments

Potential financing instruments to mobilize funds for biodiversity investments are divided into two classifications: traditional financing instruments and innovative financing instruments, as described in Figure 7 *Definition of financial instruments*.

Financing biodiversity can include the employment of multiple instruments depending on the maturity of the project and the funds available.

Each of the instruments may have multiple ultimate beneficiaries. In particular, this guide recognizes the importance of mobilizing funding to those communities and indigenous groups living in or in the proximity of protected areas (also known as community finance). As the Biodiversity Finance Initiative (BIOFIN) project recognizes, these are highly relevant actors in natural resource management who are often overlooked as key players in biodiversity financing.

Figure 7. *Definition of financial instruments*

Traditional financing instruments

Traditional financing instruments are commonly used by local and regional governments. They use schemes already established and known to the public administration and used by governments to finance all types of infrastructure and service provision.

- Own-source revenues
- Biodiversity-relevant subsidies
- Intergovernmental transfers

Innovative financing instruments

Innovative financing instruments are not necessarily "new" instruments. Rather, a financial instrument is considered innovative if it can unlock solutions to problems that the market alone cannot resolve [23]. They are important market catalyzers requiring collaboration between the public and private sectors. Such partnerships lower the financial risks of the project and create a strong common focus on timely delivery and bringing results [24].

- Ecological fiscal transfers
- Blended finance
- Green bonds
- Green loans
- Crowdfunding
- Payment for ecosystem services
- Equity
- Public-private partnerships
- Biodiversity offsetting
- Eco-labels
- Debt-for-nature swaps
- Conservation trust funds
- Insurances

Traditional financing instruments

The amount of funding available to local governments is an important determinant of the quantity and quality of services that they can provide. Where locally raised revenues are limited, urban government expenditures suffer.

Traditional forms of municipal finance, including own-source revenues such as fees and taxes, loans, grants and subsidies retain their importance and are still the most applied and accessible financing instruments for local governments to use on biodiversity investments.

Traditional financing instruments

- Own-source revenues
- Biodiversity-relevant subsidies
- Intergovernmental transfers

Innovative financing instruments

- Ecological fiscal transfers
- Blended finance
- Green bonds
- Green loans
- Crowdfunding
- Payment for ecosystem services
- Equity
- Public-private partnerships
- Biodiversity offsetting
- Eco-labels
- Debt-for-nature swaps
- Conservation trust funds
- Insurances

Own-source revenues

Own-source revenues are a key piece of traditional financing. These are resources that reach the municipal budget either directly or indirectly. Depending on their type, and the LRG´s fiscal autonomy, the local government may have full or partial control on them, and may be flexible to allocate them based on its own priorities.

LRG's budgets are the most straight-forward source of financing for local activities and projects dedicated to biodiversity and ecosystem restoration. If enabling framework conditions exist (see more in Section 3.1) along with building necessary capacities to transition from conventional to green planning, allocation of necessary resources to financing biodiversity can be secured. Other budget lines of the local government can also contribute to biodiversity conservation measures if smartly managed. For instance, renovation of public buildings can incorporate the installation of green roofs, or the establishment of green walls along roadsides as part of the upgrade of existing roads.

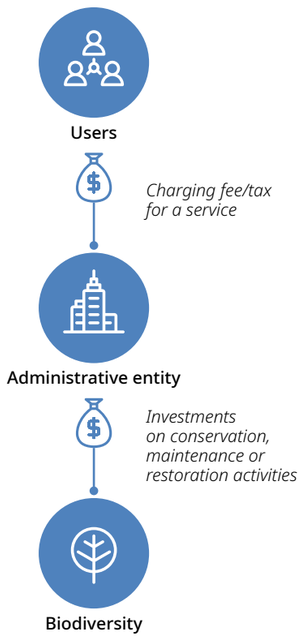
The own-source revenues of a local government are usually made up from resident fees, charges and taxes. This revenue source is of strategic importance, as its control usually belongs to LRGs. LRGs usually have a mix of taxes, which also gives the flexibility to respond to local conditions and specific needs.

Taxes and user fees

In the case of biodiversity taxes and fees can be also applied as sustainable behavior incentives, and raise public revenue at the same time.

Biodiversity-related taxes can be established by a local or national law with the aim to protect environmentally sensitive areas. Such taxes are still underutilized and contribute to only 0.9% of the revenue generated from all environmentally-relevant taxes in OECD countries.

User fees can include charging for the use of or entrance to green areas (e.g. regional parks, botanic gardens, protected areas). Other variants of this instrument are voluntary fees or donations [25].



CASE STUDY

Forest public benefit function fee in Croatia

The Constitution of Croatia declares forests as goods of greatest interest for the Republic of Croatia on the basis of their high value of public benefit functions and on the basis of the direct benefits of biomass production. Forests are therefore protected in Croatia by close protection policies. Forest Public Benefit Function Fees are paid once a year by companies and other business associations since 1983. It was initially collected by the State-owned company Hrvatske Šume (Croatian Forests) at a rate of 0.07% of total income. Currently, the Ministry of Agriculture and Forestry manages 0.0265% of the total income charge for distribution to beneficiaries.

In most cases, this fee has a significant environmental impact, however it cannot be measured because it deals primarily with natural disasters, extreme climate conditions, biotic conditions and fires. Forest area can only be used to determine concrete figures. In 2015, 6,774.5 ha of surface were prepared for natural forest development and 28,073 ha of young forests were maintained. This represents an increase of 1,689.5 ha in natural forest development area since 2014. In total, the overall expenditure on all activities has declined by 2.3% [26].

Image: Plitvice Lakes National Park © Ilya Grigorik / Wikimedia Commons

Tourism user fees

Revenues generated from tourism-based activities and used to support biodiversity conservation efforts are known as tourism user fees (TUFs). Depending on the activities, TUFs can be divided into different categories, namely [27]:

- **Entrance Fees:** fee charged to visitors to have access to protected areas or ecotourism sites (e.g. fees collected at entry gates).
- **Concession Fees:** companies that provide services within the site are charged a fee to operate or are mandated to share revenues (e.g. operation of souvenir shops and restaurants).
- **Licenses or Permits:** companies or individuals that intend to carry out activities that require supervision or special guidance to ensure the proper management of natural resources or that such activities do not harm the environment (e.g. hiking permits, sport fishing permits, licenses for cruise ship visits).
- **Tourism-based taxes:** wide range of fees and taxes charged on specific items on the tourism chain that are earmarked for nature conservation (e.g. taxes on hotel facilities, airport use, road tolls).

CASE STUDY

Beneficiary pays: Investment case for the rehabilitation of the Dar es Salaam Botanical Garden

The city of Dar es Salaam, Tanzania, in its efforts to improve the use and management of nature in the city and to attract tourists, has decided to rehabilitate the Botanical Garden.

The Botanical Garden contributes to the conservation and rehabilitation of indigenous plants, improvement of the air quality in the inner city, sequestration of carbon, and increase of the awareness of the importance of urban biodiversity, among other benefits. During the preparation of the investment case and based on the principle of "Beneficiary Pays", the residents of Dar es Salaam, Tanzania's domestic tourist and foreign tourist were identified as potential stakeholders to provide funding through entrance fees. Tanzanian nationals would pay a discounted fee in comparison to foreign visitors. The rehabilitation plan includes the creation of spaces to sell food, which could represent another channel to generate income by providing concessions to operate the food court [28].

Image: The Botanical Garden in Dar es Salaam City Centre ©ICLEI Africa & ICLEI CBC, 2020

Biodiversity-relevant subsidies

Subsidies intend to encourage or discourage an action and/or influence a change in the behavior of individuals, companies, etc. [1].

At the local level, sub-national governments can directly fund or subsidize activities undertaken by private actors that benefit biodiversity conservation or integrate national grant schemes to achieve their biodiversity objectives. These activities include expenditures on staff costs, equipment, infrastructure maintenance and rehabilitation. Subsidies can come in the form of direct transfers of funds, income or price support, direct provision of materials, tax credits, exemptions and rebates.

Subsidies can be used to generate environmental benefits, such as, payments to farmers to plant trees to reduce agricultural run-off or maintain ecosystems or subsidies to a community for the preservation of water catchment areas [25].

Unfortunately, in the same way subsidies can be supportive of protecting biodiversity, in some cases they can also have negative impacts. Therefore, subsidy reforms are also another alternative for using subsidies to mobilize finance, and can be done from different approaches:

- greening subsidies by adjusting the purpose, conditions and regulation to ensure the reduction of negative impacts;
- reducing the value of subsidies that harm biodiversity; and
- eliminating subsidies that negatively affect biodiversity [1].

CASE STUDY

From chemical fertilizers to ecological agriculture for rice production in Sri Lanka

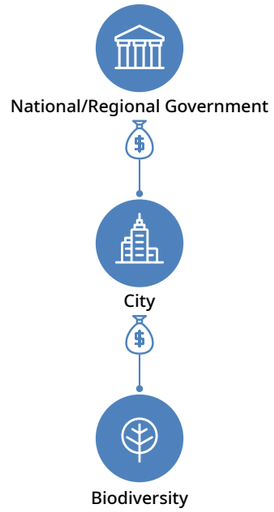
In Sri Lanka, 1.8 million people depend on paddy cultivation for rice. A fertilizer subsidy was introduced in 1962 to shift to high-yielding varieties. Later, studies showed no significant correlation between productivity and the use of chemical fertilizers. However, the subsidy was shown to support the livelihoods of many paddy farmers and is considered an assurance over food security. The subsidy cost 2.24 percent of the total public expenditures. Excessive use of subsidized fertilizer led to heavy metal contamination in soils and waterways (and therefore biodiversity loss) and suspected cases of chronic kidney disease. This was the main argument used to push for reform of the subsidy. The subsidy's reform process aims at reducing the negative impact on health and the environment as well as public spending, without harming poor farmers' livelihoods. The new policy directive (2015) also supports ecological agriculture by converting in-kind subsidies (chemical fertilizers) into cash transfers, and offering alternative options, including organic fertilizers, to improve productivity and alignment to markets. As a result, public spending on rice subsidies went down almost 50 percent [1].

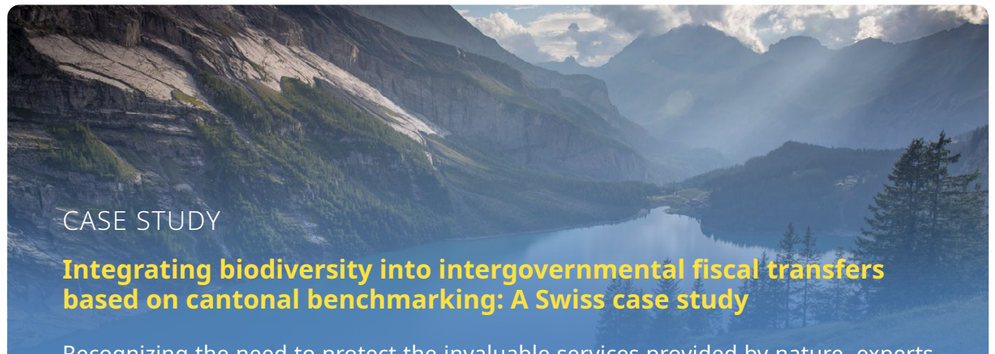
Image by ©Daniel Klein, Unsplash

Intergovernmental transfers

Intergovernmental transfers are resources transferred from different levels of government (generally the national/federal level). They can be unconditional or conditional to pre-defined purposes and do not always have to be paid back.

In the case of non-earmarked transfers, the sources can be freely allocated to activities and projects focused on biodiversity protection. Similarly, earmarked transfers for biodiversity - as its name suggests - represents a clear source to channel financial resources to biodiversity.





CASE STUDY

Integrating biodiversity into intergovernmental fiscal transfers based on cantonal benchmarking: A Swiss case study

Recognizing the need to protect the invaluable services provided by nature, experts and policy makers from Switzerland proposed a method for incentivizing biodiversity protection through intergovernmental fiscal transfers. By integrating biodiversity considerations into fiscal policies, the goal of this reform was to stimulate political bodies and encourage conservation.

To illustrate the potential impact, the experts developed a financial transfer calculation model. This model expanded upon an existing Swiss transfer scheme, incorporating the biodiversity index as an additional factor. Three key factors influenced the outcomes: i) the weighting of biodiversity and eligibility requirements, ii) the size of the cantons, and iii) other relevant structural characteristics. The integration of biodiversity into fiscal transfers required political and scientific deliberation due to the absence of a one-size-fits-all solution. This process facilitated a deeper understanding of the role of fiscal policy in conservation efforts. Exploring the potential of integrating biodiversity into fiscal transfers, this example emphasizes the need for ongoing dialogue and collaboration among policymakers and experts to ensure a sustainable future for Switzerland's biodiversity. This sheds light on the vital relationship between fiscal and conservation policies, inspiring efforts to preserve biodiversity for future generations. [29].

Image: The Oeschinen Lake in Switzerland ©DavidBirri, Oeschinensee photo archive

Image by ©Юрій Балагула, Adobe Stock

Innovative financing instruments

Governmental and own resources are not enough to address the global biodiversity conservation financing needs. As private and public-private investments are critical for the future of biodiversity conservation, it is important to employ innovative financing instruments that include market-based approaches. Such instruments can span the public, philanthropic, and private sectors in biodiversity, while fostering efforts to align economic and business incentives to biodiversity-positive outcomes [11].

New partnerships in the philanthropic and nongovernmental sector are emerging to link biodiversity conservation and private investments to support sustainable forestry, agriculture, or fishing practices. A variety of financial products and services can be used to raise capital for projects or companies that deliver biodiversity returns in addition to financial returns for investors [11].

Traditional financing instruments

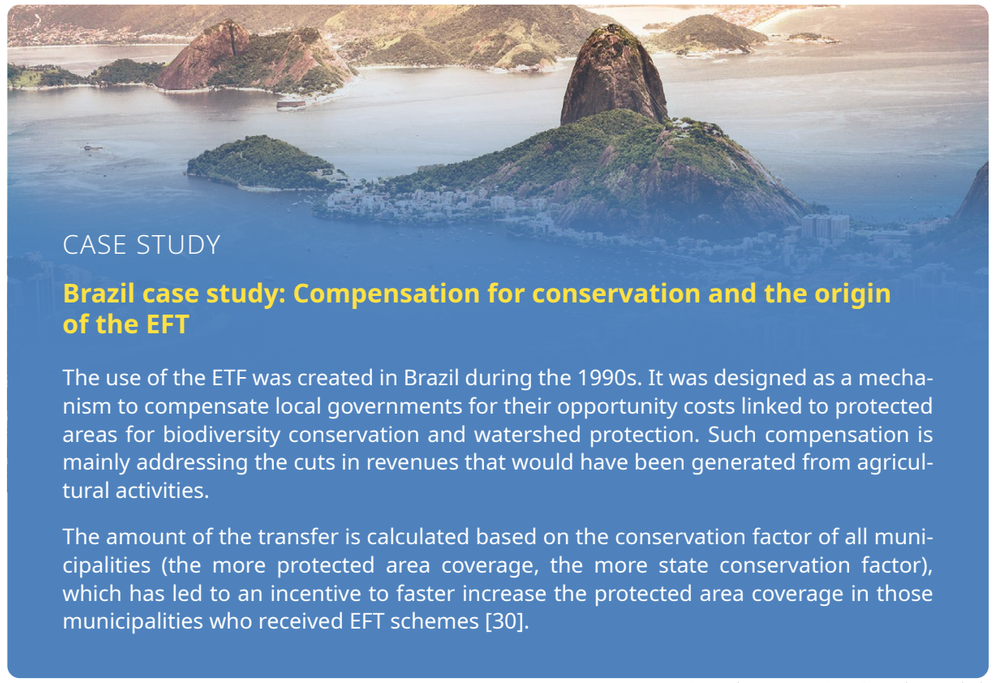
- Own-source revenues
- Biodiversity-relevant subsidies
- Intergovernmental transfers

Innovative financing instruments

- Ecological fiscal transfers
- Blended finance
- Green bonds
- Green loans
- Crowdfunding
- Payment for ecosystem services
- Equity
- Public-private partnerships
- Biodiversity offsetting
- Eco-labels
- Debt-for-nature swaps
- Conservation trust funds
- Insurances

Ecological Fiscal Transfers (EFT)

Ecological Fiscal Transfers (EFT) are mechanisms aiming to redistribute non-earmarked tax revenues between government levels mainly under the criterion of conservation of protected areas. EFT recognizes the role of subnational governments in bearing the costs of protected areas, as well as the positive benefits from conservation activities and ecosystem services. The innovative aspect of this instrument is that it integrates ecological indicators into intergovernmental fiscal transfers at the local level.



CASE STUDY

Brazil case study: Compensation for conservation and the origin of the EFT

The use of the ETF was created in Brazil during the 1990s. It was designed as a mechanism to compensate local governments for their opportunity costs linked to protected areas for biodiversity conservation and watershed protection. Such compensation is mainly addressing the cuts in revenues that would have been generated from agricultural activities.

The amount of the transfer is calculated based on the conservation factor of all municipalities (the more protected area coverage, the more state conservation factor), which has led to an incentive to faster increase the protected area coverage in those municipalities who received EFT schemes [30].

Image by ©Agustin Diaz Gargiulo, Unsplash

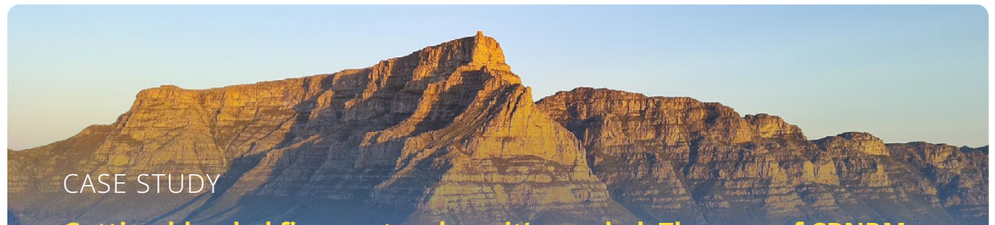
Blended finance

Blended finance is a common instrument to finance biodiversity. It consists of using public finance for the mobilization of additional private finance toward sustainable investments, often by combining public and philanthropic capital with private, return-seeking capital into the same financing deal. Blended finance is not merely the presence of public/philanthropic and commercial capital in the same transaction, but rather the strategic use of risk-tolerant capital from public and philanthropic sources to de-risk and attract larger sums of capital available from private finance [31].

The main public finance and philanthropic actors that have provided blended finance for nature-based transactions are philanthropic foundations, donors and multi-donor funds and Development Finance Institutions (DFIs). Such actors can

engage in four types of blended finance: design and preparation funds; technical assistance funds; guarantees; and risk insurance and concessional finance.

- **Design and preparation funds** consist in grant funding for the design or preparation of a transaction, to improve the viability and bankability of a project.
- **Technical assistance grants** are for capacity building in areas that are crucial for the implementation and success of the project such as impact monitoring, business model and financial management. These grants for technical assistance can be often provided by donors through a dedicated fund running in parallel to an investment vehicle.
- **Risk guarantees** protect investors against losses, as part of a capital structure. This de-risks projects that are initially perceived to be too risky by private investors. The guarantor will agree to cover the loss of a third-party financing transaction in the case of non-repayment or loss of value. Guarantees allow transactions to attract capital at more favorable rates.
- **Concessional finance** is the most common blended finance. Provided by public entities on more favorable terms in order to mobilize commercial capital, concessional finance can improve the rate of return for investors. This includes accepting subordinate or junior terms (first-loss or junior equity) compared to other co-investors [31].



CASE STUDY

Getting blended finance to where it's needed: The case of CBNRM enterprises in Southern Africa

In Southern Africa, community based conservation plays a vital role in balancing biodiversity preservation and local livelihood needs. However, a significant financing gap for nature poses a challenge to these conservation efforts, estimated to be USD 4.1 trillion by 2050. Blended finance, which combines public and/or philanthropic capital with private investment, presents a promising approach to bridge this gap. Combination of public and private investment was used to scale up private funding for community-based conservation in South Africa.

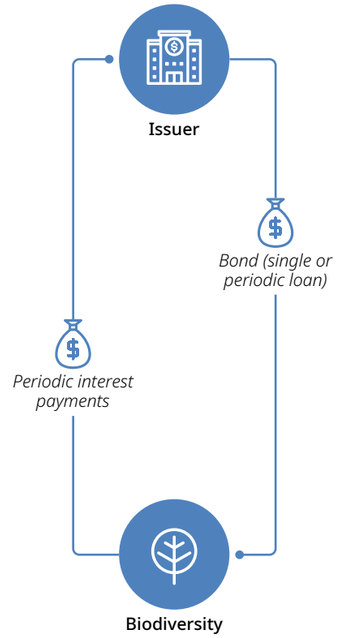
Exploring the **community-based natural resource management (CBNRM)** in Southern Africa, the carbon market emerged as a significant opportunity for large-scale private investment, followed by landscape-wide efforts that consolidated transactions into suitable financial products. Despite challenges, the wildlife economy showed potential for tangible investment opportunities. However, barriers such as limited access to commercial finance and investor reticence due to communal land tenure ownership needed to be addressed to unlock the growth potential of enterprises on communal conservancy land [32].

Image by ©Rutendo Petros, Unsplash

Green bonds

Green bonds are debt instruments that will be exclusively used to finance (or refinance) projects with environmental benefits [33].

Conventional bonds and green bonds are the same instruments. Green bonds, however, are restricted to the financing of green projects and assets, including biodiversity protection, conservation, etc. Such bonds can be issued by local governments, development agencies or companies in need of financing for green projects. Some analyses have shown that green bonds perform better and have better growth in the long run than conventional bonds [34]. Additionally, green bonds have raised its popularity in climate finance due to the current environmental awareness, which has given a perceived increased value over conventional bonds [34].



CASE STUDY

Green bonds to finance biodiversity: The Integrated Forestry Development Project, China

Aiming to improve the ecological conditions of degraded forests, the World Bank issued a green bond to provide funding to the "Integrated Forestry Development Project". The activities funded included planting of new native trees and reform land use rights in collective forest. In this case, the Chinese government also provided funding, demonstrating its buy-in to the project; proving that conservation projects can be benefited from the collaboration between a development bank and the national government [35].

Image by ©Shinzan Murray, Unsplash

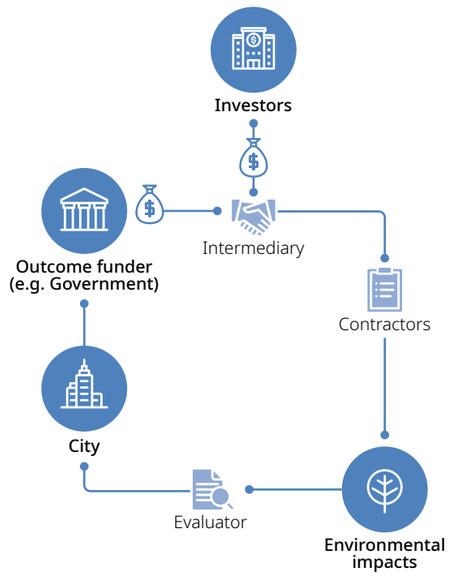
Green bond markets are regulated by voluntary standards, such as the Green Bond Principles (GBPs) and the Climate Bonds Standards. As they are long-term instruments, green bonds are becoming an attractive financing option for biodiversity, while also attracting project developers to raise capital for their projects, demonstrating their responsible approach toward business.

Although green bonds are experiencing a significant increase, there are still some challenges in implementation. The majority of local governments in the Global South are not creditworthy, and even when they are, they also often lack guidance on how to issue and regulate green bonds.

The lack of a definition of what can be considered as "green" also increases the risk of investing and undermines the capacity of green bonds to show their additional potential. For example, investors may claim that a normal bond could also finance the same green project.

Environmental Impact Bonds (EIBs)

EIBs are structured similarly to traditional bonds where principal is borrowed by stakeholders with the promise of repayment to investors, with interest, over time. The main difference is that traditional bonds are often repaid with general revenues from the issuer, not necessarily related to the financing activity, while EIBs specifically tie financial return on investment to the success of the intervention and revenue generated and/or cost savings related to that success [36].



Through such a tool, a beneficiary party, often a public authority, enters into a contractual relationship with a group of risk investors to procure a needed service or intervention on a pay-for-success (PFS, also known as pay-for-performance or PFP) basis. The PFS logic connects the payment for service delivery to the achievement of measurable outcomes. In this sense, upfront investors are repaid based on the magnitude of the outcomes achieved, thus incentivizing investors to support interventions that will generate desirable results [11]. That said, EIB can be used to finance projects where environmental impacts and relationships of cause and effect of the interventions proposed can be measured, monitored and uncontroversial (e.g. revegetation actions towards improvement of water quality that also encourage actions to reduce effluent and sediment runoffs) [37].

Among its advantages, EIBs can help issuers to leverage private capital and fund projects viewed as "risky". They can also assist in filling the finance gap on biodiversity by providing one financial vehicle for multiple stakeholders (e.g. land and property owners, one of multiple beneficiaries) which serves as an unbiased intermediary. This allows stakeholders to quickly raise large volumes of up-front capital to realize more immediate environmental benefits, and provides an opportunity to aggregate projects (Brand, et al., 2021). In particular, this scheme can include payments for ecosystem services (see the case study "New Zealand's EIB-Financed Permanent Forest Bond" for further details) and enables initial finance for the creation of carbon sinks.

CASE STUDY

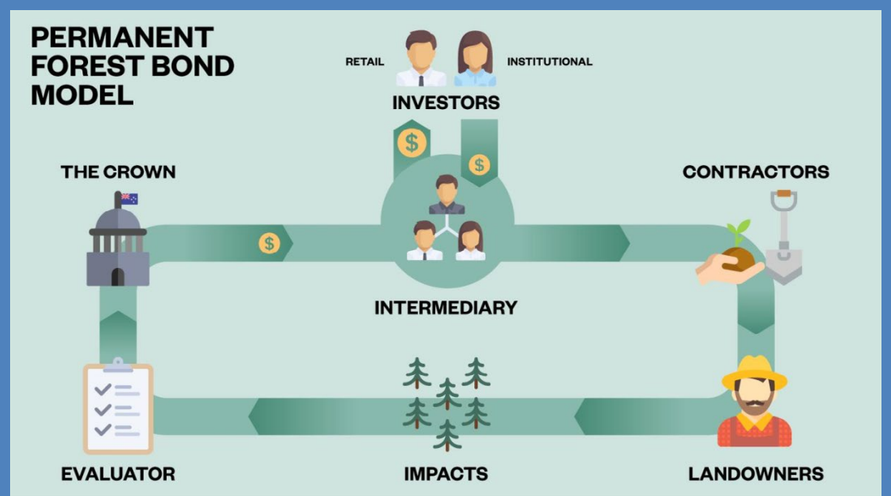
New Zealand's EIB-financed permanent forest bond

The national and local governments, acting on behalf of the Crown, have issued permanent forest bonds as a long-term investment to preserve the ecosystem services that forests provide and avoid the negative and larger costs and impacts of degraded lands.

The impact targets that will trigger payments still depend on the negotiations among stakeholders. However, it is likely that some of them come from indicators such as reduced sedimentation in associated waterways, volume of carbon per hectare after five or ten years, and improvement to erosion susceptibility.

Thanks to this EIB, the Crown expects to provide the service of forest planting more efficiently by leveraging the expertise and resources of the private sector rather than the direct intervention of the Crown itself. Figure 8 shows the schema for the permanent forest bond, which considers a wider range of investors, such as banks, pension funds and small-scale retail investors [37], [38].

***Figure 8**. Schema for a permanent forest bond*

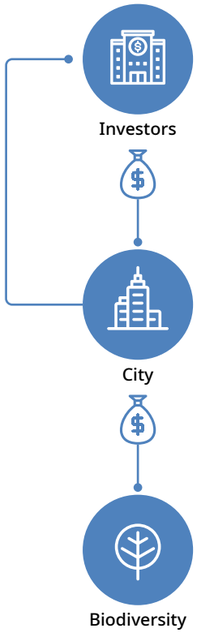


Source: Hall, Lindsay and Judd, 2017 [38]

Green Loans

Green loans can be offered by either public or private financial institutions. Financing biodiversity projects through this instrument could mean to offer low interest rates as long as the loan is dedicated to actions aiming to have positive environmental impacts.

Green municipal loans open the space for capital markets to finance municipal climate action [39]. In a typical green loan, the borrower obtains credit from a bank in return for specific commitments (in addition to customary loan commitments) to use the proceeds to finance green projects and assets that deliver positive climate and biodiversity outcomes. Pricing on green loans can be attractive to borrowers compared to a traditional loan on the basis that a green asset may be more economically efficient than a traditional asset.



CASE STUDY

Money talks: The environmental impact of China's green credit policy

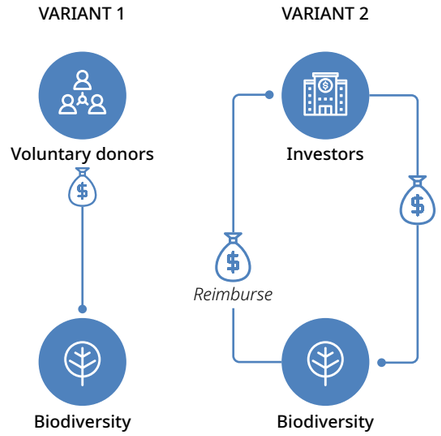
In the pursuit of environmental responsibility, China's green credit policy has emerged as a powerful force. This policy requires banks to consider corporate environmental performance when making loan decisions, reflecting a global trend to enforce environmental responsibility through financial measures. China's green credit policy acts as a catalyst, inspiring firms, particularly those reliant on external financing, to actively address water pollution. The policy's long-term constraints compel businesses to prioritize prevention at the source, leading to a shift away from end-of-pipe treatments. This focus on sustainable practices showcases the policy's effectiveness in driving environmental responsibility.

The implementation of the green credit policy illustrates the power of collaboration between the Environmental Protection Bureau and local banks. By integrating environmental considerations into loan decisions, they create a credible financial threat, encouraging firms to embrace sustainable practices. This partnership demonstrates how China's green credit policy and finance can be harnessed to enforce environmental regulations and foster a culture of responsibility in the corporate sector. China's green credit policy showcases the power of financial measures in driving environmental responsibility. As the world seeks solutions for environmental challenges, this research serves as a guide, urging stakeholders to leverage finance as a source for a sustainable future [40].

Image by ©Paolo, Adobe Stock

Crowdfunding

Crowdfunding has grown in popularity as an alternative way of raising finance for biodiversity. Crowdfunding projects are usually an initiative from non-governmental organizations (NGOs), universities or a community, and they allow a significant number of people to voluntarily contribute or invest a relatively small amount towards a project. The funds are usually committed through an online platform and the donations are then pooled together to fund a project.



CASE STUDY

Ghent crowdfunding platform realizing climate change adaptation through urban greening

In response to the pressing challenges posed by climate change, the city of Ghent, Belgium, has taken proactive steps to transform its urban landscape into a greener and more sustainable environment. Recognizing the city's strong social fabric and creativity, with citizens actively spearheading grassroots initiatives, Ghent has sought to harness this spirit of community engagement. However, many of these well-intentioned, small-scale projects encountered obstacles in securing adequate financing to flourish into successful ventures. Undeterred, Ghent authorities conceived a pioneering solution: the establishment of a crowdfunding platform, designed to empower citizens by enabling them to propose and finance their innovative ideas for the city.

The impact of this initiative has been nothing short of remarkable. Through the platform, two ambitious projects focusing on climate adaptation have been brought to fruition, symbolizing a testament to the power of collective action. Among these projects are one aimed at promoting urban farming and another dedicated to realizing the concept of edible streets. While individually these endeavors might appear modest in addressing the case climate change challenges, their successful implementation marks the beginning of a larger transformation. The crowdfunding platform has emerged as a valuable instrument, allowing the city to embrace incremental climate adaptation measures - akin to small "drops" - with potential to generate far-reaching ripple effects throughout the urban landscape. These initiatives not only enhance the city's green spaces but also serve as inspiring examples of the capacity for grassroots efforts to drive meaningful change [41].

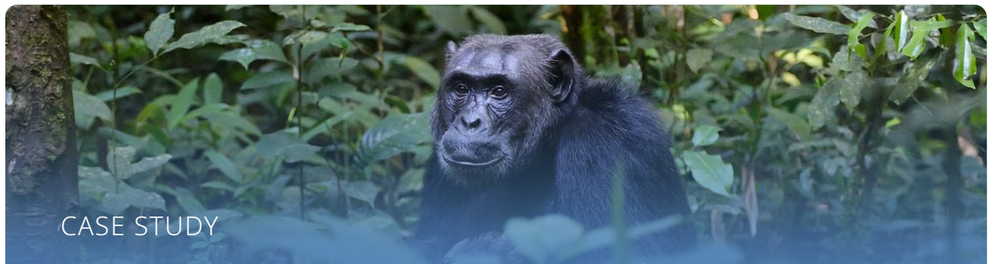
Image by ©Den Harrson, Unsplash

Crowdfunding is usually used together with other sources of funding or for small scale projects. This type of finance raises awareness and the 'buy-in' of citizens to local community projects. Depending on the project design and financial model and agreement between donors/investors, crowdfunding can take on various forms, such as donations without repayment obligation. Another variant could be using a reimburse model, in which once the project starts operating and generating any income, the investors receive back their investment.

Payment for Ecosystem Services (PES)

Payment for Ecosystem Services (PES) is an innovative approach which encourages the maintenance of natural ecosystems through environmentally-friendly practices that avoid damage to other users of the natural resources. PES can be defined as voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating offsite services [42].

For PES, beneficiaries or users of an ecosystem service make payments to the providers of that service. This is a market-based instrument where the people who own, manage and use natural resources (e.g. farmers, forest owners) are incentivized to implement actions towards biodiversity conservation and protection, such as replanting trees as a measure to protect watersheds [43], [44].



CASE STUDY

Chimpanzee habitats in Uganda: A payment for ecosystem services example

In Uganda forest loss is estimated to be about 1-2% per year, affecting the habitat of species such as Chimpanzees. Thanks to the funding provided by the Global Environmental Facility (GEF), the project "Developing an Experimental Methodology for Testing the Effectiveness of Payment for Ecosystem Services to Enhance Conservation in Production Landscapes in Uganda" provided incentives to private forest owners. To implement the scheme, it was necessary to train national partners on how to assess and monitor the maintenance of biodiversity and payment compliance; at the same time, final benefactors of the project were trained in the application of land-uses to maximize biodiversity maintenance.

As a result of the project it was possible to encourage the conservation and restoration of private forests outside protected areas which are the home of some of Uganda's largest chimpanzee population. Results showed that the PES scheme helped to reduce the rate of deforestation and firewood collection [46], [47].

Image by ©gerritbril, Pixabay

Placing an economic value on natural resources will depend on the type of use and interaction with the environmental resources and services. Cost-based methods can be used as one pragmatic way to value natural resources by estimating the costs of providing or replacing a good or service provided by nature as an approximate estimate of its benefit [19], [21].

The type of ecosystem services may vary, but they usually involve carbon sequestration and storage; or biodiversity protection and/or landscape beauty for ecotourism.

PES can be funded by public payment through which the government pays land or resource managers to enhance ecosystem services on behalf of the wider public; private payment in which beneficiaries of ecosystem services (e.g. final water users, hydropower companies) contract directly with service providers; and, lastly, public–private payment schemes that rely on both government and private funds to pay for the delivery of ecosystem services [43], [45].

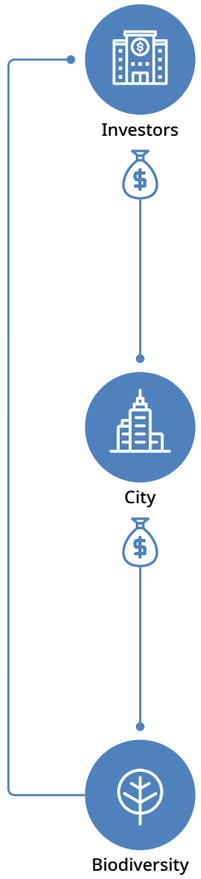
Equity

Equity financing is mainly provided by banks or investment funds. It is an important method to create and ensure investors ownership as in return the provision of funds they get an ownership share.

Furthermore, equity financing is a useful way to attract capital when projects are at an early stage of their development.

One of the advantages of equity financing is that the money that has been raised from the market does not have to be repaid, unlike debt financing which has a defined repayment schedule. Equity financing can also attract larger investors by reducing the risk investment.

However, raising equity takes a long time to get through due diligence processes, as well as time required for more management and reporting. As the investor has a proportional ownership, the autonomy in decision-making processes is limited.



CASE STUDY

Engaging private sector in the development of nature operations: The case of NatureVest's Cumberland Forest Project

NatureVest is the in-house impact investing team at The Nature Conservancy (TNC). In 2019, the team closed a deal to obtain 253,000 acres (102,000 hectares) of working forestland spanning Virginia, Kentucky, and Tennessee. The private investment fund, called the Cumberland Forest Project, will implement a sustainable forestry strategy with the goal of benefiting local economies, wildlife habitat, clean water, and climate resilience.

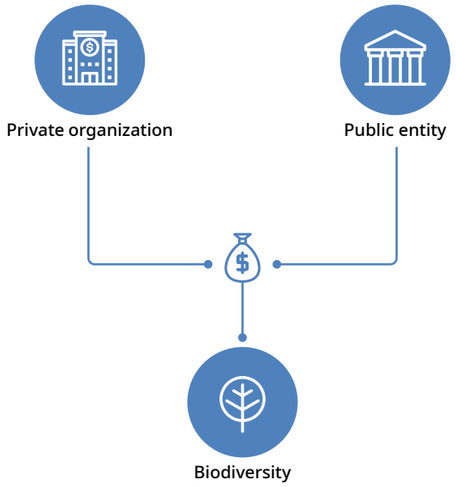
To establish this fund, the impact investing team at NatureVest designed a private equity-style structure. TNC serves as the fund manager and holds the position of the general partner. In total, the fund successfully raised over $70 million in equity from 27 investors, including TNC. Other sources of debt and reinvestment completed the financing needed to make the purchase [48].

Image by ©Becky Winner, Unsplash.com

Public-Private Partnerships (PPPs)

A public-private partnership consists of a collaboration between public and private actors to achieve goals that would not be possible alone. The aim is usually to accomplish a public task or a project by funding and/or operating on the basis of a partnership in which the financial burdens and risks for the public sector are reduced.

In the case of biodiversity projects, both sides should have deep knowledge of land use, ecosystems management and legal frameworks. Understanding the needs of local and vulnerable communities assists in managing expectations of all involved stakeholders and optimizing results.



PPPs are mainly driven by limitations in public funds to cover investment needs and efforts to increase the quality and efficiency of public services. Collaboration can create and catalyze synergies by pooling resources, skills, knowledge and institutional capacities while sharing the financial burden [49].

CASE STUDY

Natural Capital Financing Facility (NCFF): PPP financing nature

In 2000, African Parks (AP) pioneered the delegated management Public-Private Partnership (PPP) model for protected area management, and has since expanded to running 17 parks in 11 countries, with over 13.3 million hectares under management. In this model, the private partner takes full responsibility for all park management functions, and is accountable to the government, who remains the owner and also determines the policy for the landscape. AP aims to provide ecological, sociopolitical, and economic benefits for people living in and around the parks. In 2019, AP paid a total of $13.7 million in salaries to its staff, 95 percent of whom are locals. Tourism to the parks contributed $6.3 million to parks and communities, and $493,000 was generated from social enterprises, including community guides, honey production, fisheries, and moringa projects [16].

Image by ©mathisprod, Adobe Stock

Biodiversity Offsetting

Offsetting is a process in which actors compensate for the environmental destruction their activities have caused, with the objective of either having no net loss of ecosystems or biodiversity or - preferrably - a net gain. Biodiversity offsets are mechanisms that companies or developers can use to compensate for 'unavoidable' biodiversity impacts of their practices at an 'offset site'.

There has been a recent increase in the pledges from private companies to offset carbon, increasing the willingness to finance biodiversity conservation and restoration through projects elsewhere. Particularly forest carbon markets represent a growing pool of private finance that can potentially contribute to conservation and sustainable use of biodiversity. In this case, for example, biodiversity offset actors invest in the creation of an equivalent forest habitat for specific species at another place.

To achieve the intended goals, there needs to be clarity on what biodiversity offsets mean, when they cannot or should not be used as a conservation approach, and how to design and implement them. Biodiversity offsets are only appropriate for projects which have rigorously applied

all of the steps from the mitigation hierarchy (avoidance, minimisation, rehabilitation/restoration, offset, and compensation), and when a full set of alternatives to the project have been considered. Priority must be given to avoiding any damage to biodiversity. The reality is that some biodiversity will always be lost in offset exchanges as no two areas of habitat or species populations are identical. Therefore, biodiversity offsets must be a measure of last resort after all other attempts at preventing or reducing impacts have been considered [24].

The three core principles for biodiversity offsets are [50], [51]:

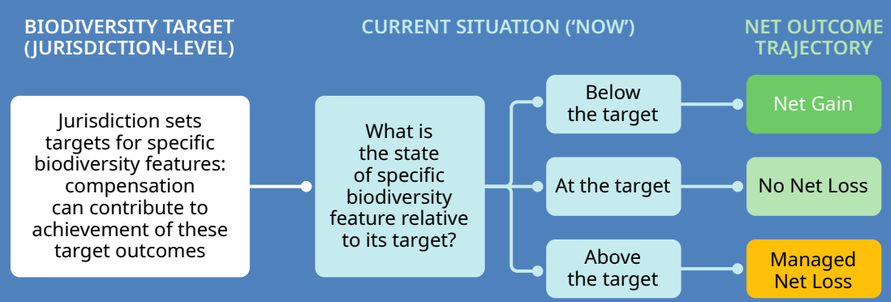
- **Additionality:** biodiversity gains that would not have occurred without any offset requirement
- **Equivalence:** balance between biodiversity gains and losses
- **Permanence:** biodiversity gains from offsetting should last at least as long as the impacts from the project do (ideally to be permanent or at least 30 years).

CASE STUDY

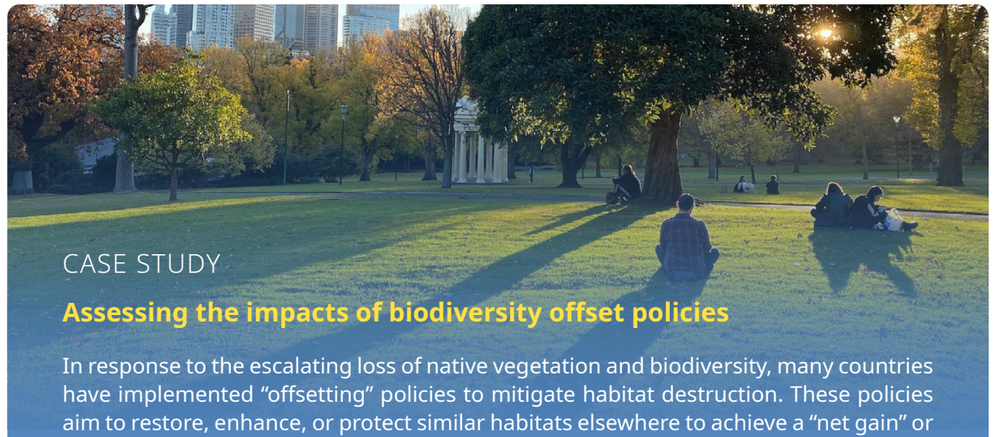
Target-based ecological compensation: Another approach for biodiversity offsetting

Target-based ecological compensation is an offsetting approach for compensatory restoration of a damaged ecosystem, where damage was caused due to development projects. For a target-based ecological compensation, it is necessary to set quantitative goals for the restoration of the ecosystem, based on the initial conditions of the site and the desired outcomes [24], [52].

***Figure 9**. Required trajectory for the target-based ecological scheme*



Source: Jeremy Simmonds et al., 2020 [52]



CASE STUDY

Assessing the impacts of biodiversity offset policies

In response to the escalating loss of native vegetation and biodiversity, many countries have implemented "offsetting" policies to mitigate habitat destruction. These policies aim to restore, enhance, or protect similar habitats elsewhere to achieve a "net gain" or "no net loss" in environmental benefits. However, evaluating the potential impacts and effectiveness of such policies remains challenging. This case study presents a general approach utilizing predictive modeling under uncertainty to quantify the ecological consequences of different offset policies. The approach is applied in a case study conducted to the west of Melbourne, Australia, where the proposed expansion of Melbourne's urban growth boundary would result in the loss of endangered native grassland, necessitating the implementation of offsets as compensation.

Three offset policies were modeled, each with varying restrictions on location and timing of implementation. The ecological impacts of these policies were assessed using a system model that predicts changes in the extent and condition of native grassland. The case study demonstrates the quantification of relative and absolute policy performance in relation to best and worst-case scenarios. Findings reveal that strategic spatial and temporal selection of offset locations yields significantly greater ecological benefits compared to spatial selection alone. Moreover, despite uncertainties in predicting future grassland conditions, the performance of the offset policies and their positive impact can still be distinguished. Finally, this example from Melbourne shows that the extent to which a policy achieves a "net gain", depends on the baseline against which policy performance is measured [53].

Image by ©Jane Slack-Smith, Unsplash

Eco Labels

Besides the above-mentioned instruments, other tools such as eco-labels that develop biodiversity-friendly products, voluntary agreements between business and government, industry standards and guidance can drive the achievement of biodiversity goals at the local level. Such information-based instruments can also raise awareness of the local communities and lead to behavioral change.

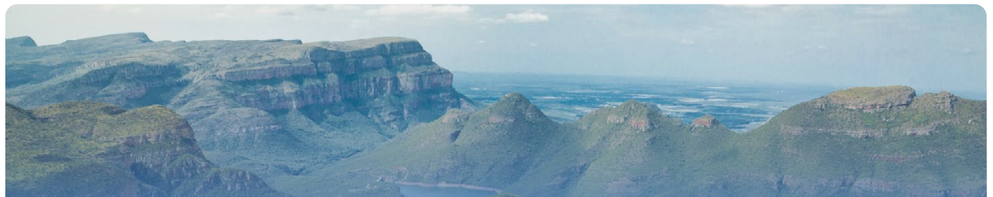
Eco-labels help users to understand the importance of the implementation of conservation practices, and create the market for more sustainable practices by attracting investments from companies and organizations supporting or interested in biodiversity.

CASE STUDY

Forest Stewardship Council certification generating financial benefits at the local level

The certification of the Forest Stewardship Council aims to protect forests and biodiversity through responsible forestry practices, such as avoiding and reducing the use of chemical pesticides in forests, and practices to conserve or restore forests' ecosystem services. The financial benefits of the FSC certification generates positive incomes for certified companies. On average, an extra USD 1.80 for every cubic metre of FSC-certified roundwood (after certification costs), and the largest quantifiable financial benefits are achieved by small to mid-sized companies in the tropics, which in turn are in the forefront for the decision on managing the natural resources either under a sustainable approach or not. Such positive impacts suggest the encouragement of other companies to look into eco-labels as an alternative to a biodiversity-friendly production [54].

Image by ©Andrew Coelho, Unsplash.com



CASE STUDY

Eco-labels in the tourism sector in South Africa: Benefits and barriers

The remarkable growth of tourism activities has generated substantial economic and social advantages. However, the magnitude and potential of this growth raise concerns regarding its adverse environmental and social consequences. Preserving the natural environment is crucial, as it directly impacts the sustainability of the tourism industry. To safeguard the natural and socio-cultural resources of destinations, eco-labels have been introduced in South Africa. These eco-labels are considered highly compatible with sustainable tourism initiatives and plan a vital role in promoting sustainable practices within the country. This case study examines the eco-labels implemented in South Africa, focusing on their benefits, barriers, and the transformative impact they had on sustainable tourism development.

Image by ©Lina Loos, Unsplash

After adopting quantitative research with data from 104 tourism businesses in South Africa, the findings reveal that eco-label certification provides numerous benefits to them. These benefits include enhanced environmental performance, improved market competitiveness, increased customer satisfaction, and strengthened reputation as a sustainable tourism destination. More importantly, the eco-labels have encouraged businesses to adopt sustainable practices, leading to resource efficiency, waste reduction, and the preservation of natural and cultural heritage. This policy of eco-labeling promotes sustainable tourism practices, while fostering environmental conservation and preserving socio-cultural resources.

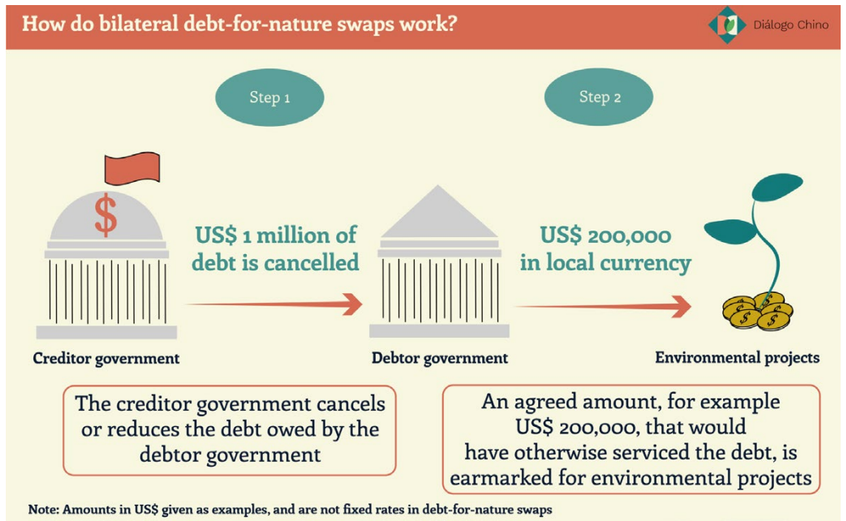
While challenges exist, such as high cost and limited awareness, this example in South Africa emphasizes the need for cost reduction measures, enhanced public awareness campaigns, and stronger government support to maximize the effectiveness of eco-label initiatives [55].

Debt-for-Nature Swaps

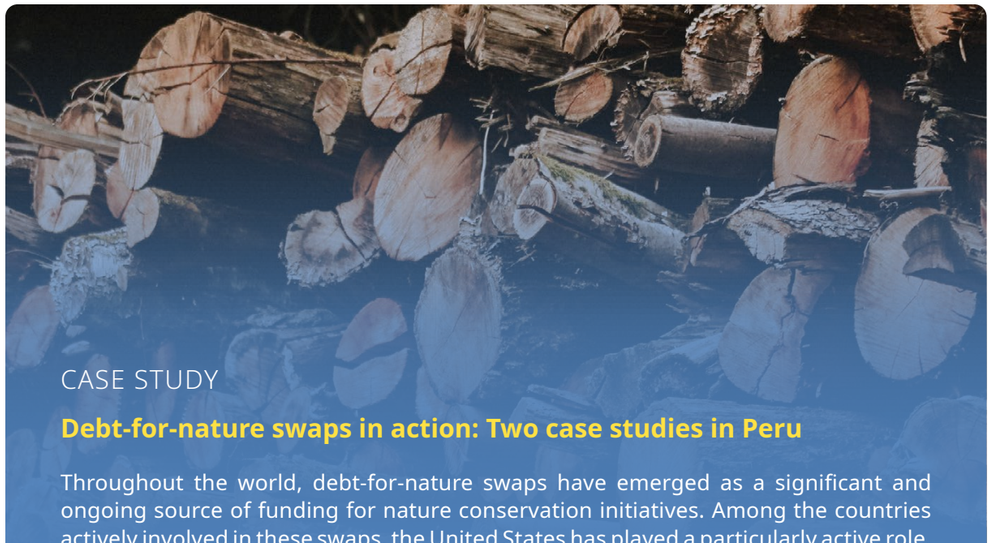
When a country is financially distressed and struggles to repay foreign debts, cuts of public expenditures can often occur in programs and initiatives related to biodiversity protection and conservation. The principle of debt-for-nature swaps starts with reducing national debt levels and turning those payments into funds to support national biodiversity conservation efforts [1].

The scheme usually involves the debtor government and the creditor (banks, country government, private companies), which is responsible for adjusting the debt (see Figure 10 *Bilateral debt-for-nature swaps*). However, there is the possibility of involving an NGO as a third party purchasing outstanding debt from the creditor.

Figure 10. *Bilateral debt-for-nature swaps*



Source: Soutar & Koop, 2021 [56]



CASE STUDY

Debt-for-nature swaps in action: Two case studies in Peru

Throughout the world, debt-for-nature swaps have emerged as a significant and ongoing source of funding for nature conservation initiatives. Among the countries actively involved in these swaps, the United States has played a particularly active role. This study delves into two case studies of debt-for-nature swap projects conducted in Peru, aiming to explore the objectives associated with these swaps. These objectives include enhancing the effectiveness of monitoring and accountability within debt-for-nature swaps, fostering local capacity building, and refining swap administration.

With the first case study, the ProNaturaleza project in the Pacaya Samiria National Reserve, a long-term integrated conservation and development initiative, has yielded significant benefits. This 2-million-hectare flooded forest in the northeastern Peruvian Amazon is home to diverse wildlife, including manatees, giant river otters, pink freshwater dolphins, and tapirs. The reserve, initially established in the 1940s to protect paiche fish, faced resource depletion and conflicts over natural resources due to overharvesting. The ProNaturaleza project implemented sustainable management plans, leading to notable improvements. Through biological monitoring and community engagement, the project demonstrated an increase in populations of side-necked turtles and paiche fish. Villagers actively participated in protecting turtle populations, relocating nests, and monitoring hatching turtles. The number of collected eggs for renesting increased significantly, and paiche counts exhibited steady growth. These conservation efforts brought socioeconomic benefits to the local communities, enhancing species populations and improving their well-being.

The second case study emphasizes the Tropical Forest Conservation Act projects in and around Alto Purus National Park. These projects have been instrumental in combating illegal logging. Five out of thirteen projects focused on reducing illegal logging in this region, receiving significant funding through debt-for-nature-swaps. These projects implemented strategies such as constructing guard posts along rivers to restrict access to illegal logging and empowering indigenous communities through various initiatives. These efforts have yielded positive outcomes, significantly reducing illegal logging activities and facilitating the regeneration of valuable forest resources. By strengthening local capacities and promoting sustainable practices, these projects demonstrate the effectiveness of debt-for-nature swaps in combating illegal logging and supporting indigenous communities in their stewardship of natural resources [57].

Image by ©Mathias Reding, Unsplash

Conservation Trust Funds (CTFs)

These types of funds are legally independent institutions and channel financing for biodiversity conservation. The income comes from different sources, for instance international donors, private sector or governments, and creates better coordination between donors, governments and civil society in the long term. CTFs may also be used in combination with other financing mechanisms, such as tourism taxes and fees allocated by law for nature conservation or PES. They are mainly used to finance long-term management costs of a protected area [58], [59].

This financing instrument, similarly to all trust funds, mandates regular audits and monitoring actions to trigger the disbursement procedures, which improve the quality, efficiency and accountability of con servation management. CTFs allow for a grant to be strategically planned over time instead of a one-time transfer grant [58], [60].

The compliance and successful operation of a CTF is due to the careful creation of opera-tion procedures as well as monitoring and evaluation; however, these have to be carried out by a third party, which represents an administrative cost.

CTF involves the participation and coordination of different donors, beneficiaries, local communities and administrative entities, thus it is necessary to establish strategies and financial plans that ensures all activities are aligned with the goal of the CTF. Figure 11 enlists the key elements that should be addressed by a strategic and financial plan for the operation of a CTF.

Figure 11. *Key elements addressed by a CTF's strategic and financial plan [59]*

While there is no commonly accepted format, a strategic and financial plan generally addresses the following:

Goals which identify targets and state what must be done to accomplish the CTF vision.

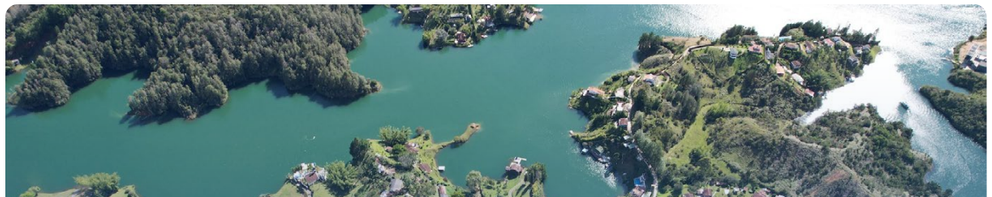
Objectives which restate goals in operational terms and quantify what and when results will be achieved.

Activities which express how the results will be achieved and describe what actions the CTF will take to achieve results.

Who is going to carry out each activity, keeping in mind that CTFs often need to work with other partners to undertake activities and achieve objectives.

Resources which are needed (human and financial) and, in particular, any gap between existing financial resources and the costs of carrying out the strategy.

Metrics, benchmarks or key performance indicators (at the goal, objective and/or activity level) to identify how the CTF will measure its progress relative to goals.



CASE STUDY

Lessons learned from the Colombian National Protected Areas Conservation Trust Fund

Thanks to grants provided by the GEF and the Kingdom of the Netherlands to the Republic of Colombia, the Colombian National Protected Areas System was consolidated. Its mandate includes the execution of public-sector conservation policies over a timeframe of five years related to the National Protected Areas System. In line with the Global Environment Objectives (GEO), this fund will contribute towards attaining several goals, including: conservation of 2.8 million hectares from national parks, 20% of the surrounding territories, and 90% of baseline natural vegetation cover maintained in core conservation areas.

As part of the lessons learned and good practices, it has been identified that an extensive level of local participation produces significant conservation benefits. The use of participatory approach was used to enhance local governance structures, and particular attention was given to nurturing social relationships based on ethical and political principles rooted in respect and support for the self-governance of ethnic territorial authorities.

Additionally, a good trust fund operation should prioritize the following:

- Establishment of clear and measurable goals and objectives
- Promotion of wide stakeholder involvement
- Ensuring long-term financial and institutional sustainability
- Harmonization between the fund and national environmental policies and commitments [61].

Image by ©Emmanuel Appiah, Unsplash

Insurances

Insurance schemes can be used to protect natural resources and mitigate risks associated with biodiversity loss. They can provide financial support for restoration, conservation, and management of ecosystems and species. Insurers can also provide coverage for losses due to extreme weather events, natural and man-made disasters (floods, pollution leakages, etc.), and other environmental risks, which can help protect biodiversity and ecosystems [17].

The scheme requires the insurer to refund a percentage of the loss or a payment dedicated to cover maintenance and restoration activities of the natural capital assets. In this sense, this instrument can be used in preventive measures that aim to enhance the resilience of the ecosystem, or as a cushion during biodiversity loss [17].

Despite of its increased importance in the last years, there are still actions to be taken by both policy makers and insurance industry to increase the role of this financing instrument in protecting biodiversity, including:

- incentivizing market participation in insurance for biodiversity;
- addressing the challenges in pricing biodiversity risk;
- collaborating to pool risks and adequately address biodiversity;
- promoting investment in biodiversity-positive activities; and
- discourage biodiversity-negative activities, among others [62].

CASE STUDY

Insurance policies to reduce human-wildlife conflict in Kenya and Sri Lanka

The establishment of farms in rural areas close to open spaces where animals such as elephants, lions, hyenas, cheetahs also coexist has led to damage to crops, property, and, in some cases, human injuries. In many cases, the conflicts can cost the lives of both humans and animals in defense or as a means of revenge.

Farmers in Sri Lanka and Kenya have found a way to protect against this. By paying around USD 16 per year to insurance policies, provided by the private insurance company Sanasa, these farmers will be able to cover crop damage, hospitalization costs and grain stores. Although insurance does not solve the conflict itself, it is an instrument to support farmers' finances and protect wildlife from retaliatory attacks.

The pilot project in each country aims to sign up a minimum of 1,000 farmers with joint efforts from the insurance companies and governments. Given the fact that human-wildlife conflicts are growing worldwide, the scheme is also expected to be implemented in Malaysia in collaboration with the IIED and an environmental NGO [63].

Image by ©Bhargava Srivari, Unsplash

3 Accessing finance

3.1 Enabling conditions

An enabling environment involves a number of factors and conditions needed for the design and smooth implementation of a biodiversity project. Together, such conditions can minimize risks during the project preparation and implementation process. Figure 12 *Conditions for an enabling environment* shows the main factors that help create an enabling environment.

Figure 12. *Conditions for an enabling environment*

Conditions for an enabling environment
• Supporting regulatory environment • Strong public institutions • Robust political framework • Implementation capacity • Investor-friendly environment

Supporting regulatory environment

This first essential step is to assess and identify any existing policies or regulations that contribute to the implementation of nature biodiversity-related projects, as well as those that may impede the path to biodiversity investment, and to recommend amendments or propose new policies or regulations to facilitate investment.

Strong public institutions

Institutions play a pivotal role in successful project implementation. Stable and project-relevant institutions are critical preconditions for project development. Strong institutions are key in sustaining economic growth and attracting international public and private investors. LRGs should be aware that no matter how strong their project concept is, without strong public institutions it is unlikely to be funded.

Robust political framework

One of the biggest challenges for local and regional governments is the high risk of administrative change. The timeline for preparing and implementing biodiversity projects can easily exceed the lifespan of a government. The risk can be minimized when the commitment to the project is not linked to one person only, but enjoys the support of many politicians, public administrators and other stakeholders.

Implementation capacity

Projects need steady leadership, clear governance structure, and structured project management for effective decision making, planning, coordination, and implementation of the various workstreams. Defining clear roles and responsibilities helps develop and implement the project as smoothly as possible.

A competent team is a key for success. The staff engaged should be defined, appointed, and trained early in the process, taking into consideration that different project stages need different skills. It is advised to plan the needed size and composition of the staff ahead of time.

Investor-friendly environment

A favorable investor climate ensures a solid understanding of the project and investment rationale, facilitating both public and private funding. This involves having a clear business plan, where priorities are clearly set, the amount of investment needed is defined.

3.2 Project development

The design of a project is a time-consuming and complex process, and consists of several stages. While the specifics of the project development cycle at each stage can vary depending on the local context, stakeholders, and powers and authorities of the local government, the steps themselves are broadly the same.

Biodiversity projects are typically long term and therefore it is possible to finance different stages.

Figure 13 shows the different stages that guide a project from start to finish.

Figure 13. *Steps for project preparation*

Stage 1: Project identification

Project development at the local level should be based on existing plans and strategies. The selection of investments shall be guided by comprehensive risk and priority assessments, also considering the local governments budgetary constraints and potential. The most basic classification is prioritizing ideas along their importance and urgency, as shown in Figure 14.

Figure 14. *Prioritization matrix*

Once the project idea is defined, LRGs can narrow it further down through assessing the feasibility and risks of the identified interventions. LRGs can use the following evaluation metrics to prioritize projects:

Potential biodiversity - conservation, restoration or alteration interventions	Feasibility			Time required for the intervention to show impact on biodiversity (high | medium | low term)	Overall impact (high | medium | low)
	Technically (high | medium | low)	Politically (high | medium | low)	Financially (high | medium | low)		
E.g. reforestation activities *Coral reef restoration* *Implementation of sustainable agriculture* *Reintroduction of species*	*Depending on the availability of the technology/ capacities*	*Would it require a change in the legislation/laws*	*How much it is a cost-effective intervention with substantial results*		

Depending on internal capabilities, the LRG could consider hiring external experts to assist during the assessment.

Stage 2: Stakeholder engagement

Each project design should start with a stakeholder engagement plan (SEP), which will identify and prioritize key stakeholder groups, provide a strategy and timetable for sharing information and consulting with each of these groups, and describe resources and responsibilities for implementing stakeholder engagement activities.

2.1 Stakeholder identification and analysis

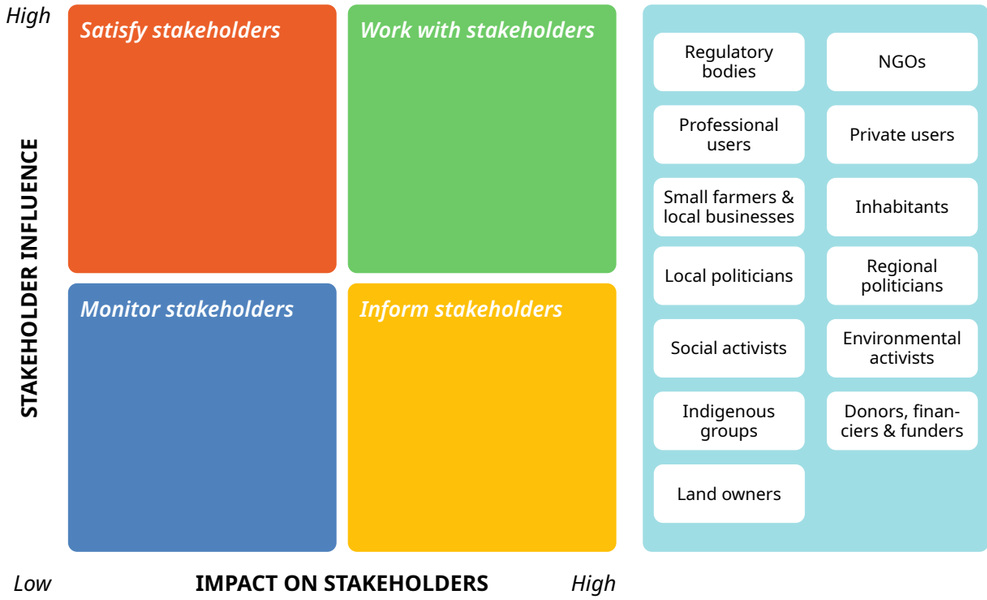
A good stakeholder engagement plan starts with the identification of the stakeholders that might be affected or have an interest in the project. Examples of potential stakeholders vary according to the scope of the intervention and might include various levels of government authorities, local organizations, NGOs, companies, civil society organizations (CSOs) and nearby communities. Vulnerable groups should also be identified as they might not have a voice to express their interests or needs.

A detailed analysis of each of the identified stakeholder groups, their interests and how the project will impact their activities, as well as how their activities could affect the project, should be described. This can be achieved through different methodologies, depending on the type of stakeholders involved, but usually includes meetings and networking events. It is important to understand the specifics and sensitivities in each of the groups. The outcome of this analysis will inform the next

steps of the plan, as well as the prioritization of the key groups that should be consulted during the process.

Figure 15 *Example of a stakeholder map* illustrates an approach to map and prioritize the impact the project will have on the different stakeholders (primary, primary, secondary and tertiary stakeholders). For biodiversity projects, the stakeholders tend to be environmental NGOs, actors from the academia, individuals or community groups interested and potential users or beneficiaries (even those who will be negatively affected), private companies (e.g. tourism operators, forestry companies), public authorities (from the ministry of environment, forestry, regional planning, etc.) and relevant coalitions [6], [64]. Annex I includes a checklist to identify potential stakeholders according to their level of involvement.

Figure 15. *Example of a stakeholder map*



A good stakeholder engagement plan starts with understanding stakeholders - use this map template to list, categorize and prioritize stakeholders based on influence and impact.

2.2 Information disclosure

Offering accurate information about the project, its impacts, and any other relevant aspects that may have an effect on the stakeholders is key for a good collaboration. Making information accessible and clear to interested parties demonstrates transparency and inspires and maintains stakeholder engagement in the long-term.

Partners should agree on the format of the provided information, the level of technical details about the project to be disclosed and the identification of spokespeople that will be in contact with stakeholders. This will allow stakeholders to evaluate benefits and negative impacts of the project on their activities. At this stage, partners should consider possible sensitive and controversial issues, weighing potential risks in disclosing such information. This is a key step to anticipate conflicts and strategies to minimize opposition to the project. It is also important to establish how information will be disclosed, whether through the publication and distribution of a report, meetings or a summary with key information. This choice will highly depend on the type of stakeholders identified previously [65].

2.3 Stakeholder consultation

To build constructive relationships with the identified stakeholders, it is important to deploy interviews, polls, workshops and technical meetings as appropriate to listen to their views, concerns about risks, impacts and benefits. The format of the consultation process will depend on the local context and the type of stakeholders previously identified, as well as the nature of expected questions to be posed. It might also involve more than one opportunity to build knowledge on the specificities of the project, as well as the different perceptions from external parties.

Usually, the consultation process generates valuable information that might lead to improvements on the project design and the identification of risks. At the end of this opportunity, LRGs should evaluate if the feedback provided by the stakeholders can be incorporated and document the result of the process. Keeping a record of the dialogue is relevant to ensure further management of the project [65].

Steps for an effective consultation

1. Plan ahead

Collect details on key questions regarding purpose, requirements, priorities, stakeholders, responsibilities and methods.

2. Good practices

Make sure that the process is targeted, informed, two-way, gender inclusive and documented.

3. Incorporate feedback

Considered the views shared in the consultation on the project's decision-making processes.

4. Document the consultation outcomes

Such documentation provides the basis for reporting back to stakeholders on how their views have been addressed.

5. Report back

Follow up with stakeholders to let them know what has happened and what the next steps in the process will be.

Source: IFC, 2007 [65]

2.4 Stakeholder involvement in project monitoring

Involving stakeholders in project monitoring can assist in increasing the transparency of the project, as well as giving a sense of responsibility and empowerment to such actors. A participatory process can also contribute to strengthening the partnership.

In the process, it is important to define methods and indicators that are meaningful to the involved stakeholders. They can also be invited to observe the project implementation and to be engaged in group discussions on how to manage new issues that might arise [65].

Stage 3: Expert engagement

After performing a deep analysis of the main aspects of the project, it is important to start engaging experts who will work on the project. Depending on the project stage, different skills and positions are needed. The staff engaged should be trained early in the process, taking into consideration that different project stages need different skills. At this moment, it is important to consider factors such as the local government's internal capacity to engage and the complexity of the project.

At this stage, LRGs have to assess their internal expertise and budget available, which will allow the identification of gaps and the need and capacity to hire external experts.

In the context of the development of a biodiversity project, the following skills should be held either by LRGs' internal staff and/or external experts:

- Knowledge of biodiversity and ecology, especially to the current state of the biodiversity in the region, including species composition and distribution, habitat quality, etc.
- Knowledge of relevant laws, regulations and policies according to the type of project
- Ability to work collaboratively with other stakeholders
- Understanding of environmental assessment processes
- Knowledge of relevant software and technologies
- Ability to assess and mitigate typical risks for biodiversity projects (political and socio-economic risks, technical risks, natural risks, security risks)
- Knowledge of potential sources of funding and budget management, skills on fundraising and grant writing

Moreover, projects need steady leadership, clear governance structure, and structured project management for effective decision making, planning, coordination, and implementation of the various workstreams. Defining clear roles and responsibilities helps develop and launch the project as smoothly as possible.

Stage 4: Assessing financial and technical options

Once the desired outcomes of the project have been identified, and all the necessary experts and consultants are on board, it is time to assess the technical and financial options available for the project.

In terms of technical options and viability, it is important to evaluate the needs of the community, enablers and resources. Key considerations for selecting the most suitable technology include:

- Effectiveness
- Land and geography
- Logistics
- Regulations
- Local climate
- Institutional capacity
- Affordability
- Durability and versatility
- Sustainability
- User-friendliness

Advancements in technology are playing an increasingly significant role in enhancing research related to migration, human-wildlife conflict, species relocation, as well as predator-prey interactions. These technological innovations can also be utilized to strategically evaluate biodiversity hotspots, identifying areas where human impact should be minimized. Emerging technologies, ranging from robots and drones to insect-attachable sensors, are evolving to target specific animals or habitats, offering the potential to shift from species detection to safeguarding their natural habitats.

In addition to selecting the technology, potential funding sources and instruments should be identified as early as possible, based on existing regulatory and policy environments, budget and capital expenditures. An economic cost-benefit analysis might be necessary to assess both financial and non-financial factors. Often external experts are engaged to model the cash flows of the different technical solutions based on different funding models, as well as quantifying the benefits and affordability of each option.

Stage 5: Demonstrate feasibility

A project has to demonstrate feasibility. Such requirements could be different for different stakeholders. For the LRG, for example, requirements such as the project's impact on the community, and how it aligns with broader development plans and priorities should be considered.

External, additional financial partners supporting the project could require that political support for the project at the national or local level be shown, and that the demonstrated development (co-)benefits are greater than costs, as well as how social and environmental risks will be mitigated, and whether the business model is sustainable.

It is important to involve a diverse range of experts, including technical, social and financial experts, early in the assessment of feasibility so that projects are holistically sound, in order to avoid outcomes where, for example, a technically robust project is not financially viable. A checklist for demonstrating project feasibility can be found in Annex II: Project feasibility checklist.

Stage 6: Secure financing

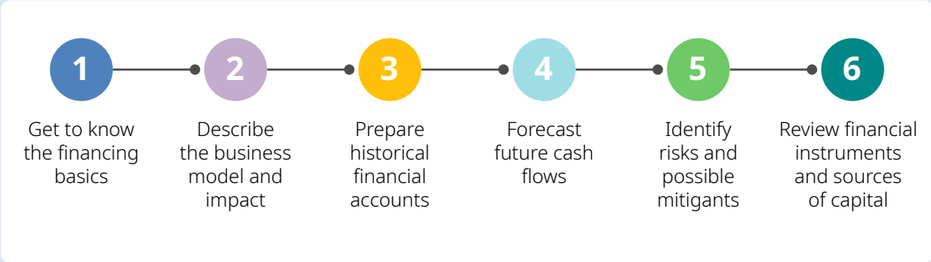
Any funding gaps should be identified as early as possible, already during the design phase. If own sources are not sufficient, as an additional funding option, LRGs particularly in the Global South, relying on intergovernmental transfers, should assess as next option grants available at the national level and check the processes to access them.

Different funding models require different allocations of roles and responsibilities, as well as the risks and rewards of undertaking the project. These responsibilities span the project development cycle from conceptualizing the project, to construction, performance and operation and maintenance. This is why multilevel cooperation is necessary to make the processes more agile and efficient.

Biodiversity projects that see greater public ownership require more involvement (financial, capacity-wise etc.) from LRGs and the national government.

The European Investment Bank developed a step guide to financing biodiversity projects, as seen in Figure 16 [66].

Figure 16. *Steps to structure and prepare relevant information to access the right type of financing*



1 Get to know the financing basics, including understanding the most common financial instruments that investors are searching for.

2 It is important to clearly define the expected impact as well as the business model and potential financial restrictions. A summary of the business case will help potential lenders or investors understand the vision and potential environmental and social impact of the activities. Writing a business plan will also force fundamental questions to be asked about the project and future strategy which will make the financing needs much clearer and improve the understanding of relevant risks and opportunities [66].

A business plan usually contains information about the expected impact, market analysis and a detailed financial analysis, including barriers and opportunities.

3 Prepare historical financial statements to describe the current financial standing. Credit profile assessments typically include the evaluation of financial leverage (usually measured by debt/equity ratio from the balance sheet), profitability (tends to be measured by Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA), or net income margins from income statements), or cash flow generation (shown in cash flow statements).

4 Set up a simple forecast to analyze cash flows. The purpose of this exercise is to understand how much money is needed by when, and the ability of projected revenue streams and cash flows to cover the future financial obligations under various funding structures.

5 Identify key challenges, risks and potential risk mitigants. Compiling a list of the key project risks and running calculations for 'what if this happened' scenarios will help to decide what type of financing is appropriate. Understanding what can affect revenues and cash flows and how one can mitigate such risks will make potential investors or lenders more comfortable and, as a result, help to reduce financing cost.

6 Analyzing different funding structures and sources of capital. Review the pros and cons of various funding sources compared to the project growth objectives, key risks and current stage of development.

Source: Adapted from EIB, 2021 [66]

Stage 7: Implementation and Monitoring

Monitoring the implementation and operation of the project is the last stage of project development to make sure that the project continues as planned and avoid unnecessary delays, cost overruns or poor management practices.

3.3 Selecting financing options

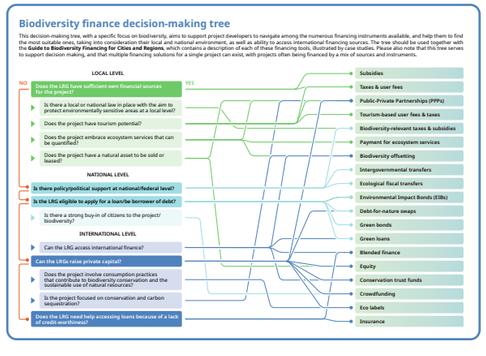
The selection of the suitable financial instruments requires an internal assessment of the legal and fiscal capacity of the LRG accessing and using certain financial instruments. Such selection will also depend on the approach to biodiversity (conservation or regeneration), and the type of the entities involved (public or private).

The Biodiversity Finance Decision-Making Tree with "Yes" and "No" questions aims to support this selection process. It builds on the local and national environment, as well as the project developers ability to access international finance. Through these simplified questions LRGs can better navigate among the financing instruments and understand their options. The tree contains a filtered list of tools aligned with this Guide, where each of them are described and illustrated with a case study.

For further information it is also suggested to visit the BIOFIN Catalog of Finance Solutions [67]. This catalog is open source and provides a long list of solutions that can be searched by the financial result they produce, the financial instrument they rely upon, whether they are public or private finance, and the economic sector in which their use is most prevalent.

In addition to the Biodiversity Finance Decision-Making Tree please also consult the Catalog of Financing and Technical Assistance Opportunities for 2023 - 2024, which is a collection of international financing opportunities for biodiversity projects.

Click below to access the additional materials.



Biodiversity Finance Decision-Making Tree

Catalog of Opportunities for Biodiversity

4 Conclusions and recommendations

Conclusions and recommendations

To achieve the goals of the Paris Agreement massive infrastructure investments and adaptation efforts are required for sustainable, low- emission, and climate resilient development. To improve the availability and accessibility of funds, action needs to be ramped up at all levels of government, including local, regional, and national.

As of today there is a huge gap between funds required for and funds invested in biodiversity conservation and there are **multiple barriers to overcome**.

Barriers from the investor perspective

Value of nature

As nature is considered a common good, biodiversity's true value is often missing from economic transactions. It is difficult to charge for and difficult to exclude anyone who doesn't pay from benefiting from the value generated. In practice, capturing the value of biodiversity recovery is difficult, making it less attractive to private investments.

Public procurement procedures

In some cases, the regulatory framework might be a challenge to financing biodiversity conservation. This happens due to public procurement procedures that do not allow for or undermine the engagement of external suppliers or are not designed for small or specialized companies and organizations, which usually take the lead in investing in biodiversity measures.

Return on investment

The business model for securing a return on investment in biodiversity projects is not as obvious as for other 'pay-as-you-go' type investments such as sustainable transport or renewable energy where a fee-for-usage can be established. In some cases, as the benefits are shared among a large group of people, it might be difficult to monetize.

Project scale

As most biodiversity challenges are localized, solutions need to be tailored to individual conditions, reducing the ability to scale and undermining the replicability of such projects.

Barriers from the local government perspective

Lack of specific knowledge

The effectiveness of biodiversity interventions depends greatly on accurate information about local climatic conditions and the appropriate monitoring of the proposed solutions effectiveness. The lack of such knowledge undermines the capacity of projects to show and evidence the proposed benefits.

Limited capacities at the subnational level

In some cases the human and technical resources are limited for formulation of a project, especially in developing countries.

Changing priorities

Depending on the government's priorities and electoral mandate, preserving biodiversity might lose out to other, more popular sectors, such as housing.

Complex maintenance and monitoring

Biodiversity projects are usually complex and involve long-term costs.

To close the investment gap and build a resilient future policymakers must create enabling conditions to help LRGs advance towards a climate resilient urban development. This means among others to integrate and leverage biodiversity criteria in intergovernmental and fiscal transfer systems. National governments should also review the subnational borrowing frameworks to ensure that LRGs acting climate-smart and prioritizing biodiversity, can access international and private finance.

Local governments should prioritize regulations and incentives that promote biodiversity in their climate action plans and relevant strategies. These regulations can serve as an entry point for generating revenues e.g. via fees and taxes as well as to attract private investment.

No single source of funding is sufficient to cover the anticipated costs. Instead of relying only on own sources and governmental transfers, LRGs should use a mix of public and private funding from international, national, local, and community sources (e.g. loans, grants, bonds, microfinance, tax revenue, community lending, crowdsourcing, etc.) and consider engage new partners.

To address the lack of data and build solid project concepts, more investment in national and local level data systems for monitoring and data aggregation is needed. This would also better equip LRGs to understand, monitor and manage biodiversity risks. This data can be also used in the development of capital investment planning, setting benchmarks and targets, and other measures of effectiveness.

References

[1] M. Arlaud, et al. "The BIOFIN Workbook 2018: Finance for Nature," The Biodiversity Finance Initiative, United Nations Development Programme (UNDP), New York, United States of America, 2018. [Online]. Available: https://www.biofin.org/sites/default/files/content/publications/BIOFIN%20Workbook%202018_0.pdf

[2] "Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services", IPBES Secretariat, E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo, Eds. Bonn, Germany, 2019. [Online]. Available: https://doi.org/10.5281/zenodo.3831673

[3] A. Bassi, R. Bechauf, L. Casier and E. Cutler, "How can investment in nature close the Infrastructure gap?," International Institute for Sustainable Development (IISD) and United Nations Industrial Development Organization, Canada, Aug. 2021. [Online]. Available: https://nbi.iisd.org/wp-content/uploads/2021/10/investment-in-nature-close-infrastructure-gap.pdf

[4] P. Negreiros et al., "The state of cities climate finance," Cities Climate Finance Leadership Alliance Secretariat, Atlantic Council's Adrienne Arsht-Rockefeller Foundation Resilience Center and World Bank. Jun. 2021. [Online]. Available: https://citiesclimatefinance.org/wp-content/uploads/2021/06/Part-1-I-The-Landscape-of-Urban-Climate-Finance-FINAL.pdf

[5] "Biodiversity Finance Reference Guide," International Finance Corporation (IFC), Washington DC, United States of America, 2023. [Online]. Available: https://www.ifc.org/content/dam/ifc/doc/mgrt/biodiversity-finance-reference-guide.pdf

[6] F. Hesselink et al., "How to engage stakeholders and mainstream biodiversity?," Secretariat for the Convention on Biological Diversity (SCBD) and International Union for Conservation of Nature and Natural Resources (IUCN), in Toolkit CEPA, Section 3, pp. 151-225, 2007. [Online]. doi: https://www.cbd.int/cepa/toolkit/2008/doc/CBD-Toolkit-Section3.pdf

[7] "Ecosystem Services & Biodiversity (ESB)," Food and Agriculture Organization of the United Nations (FAO). http://www.fao.org/ecosystem-services-biodiversity/en/ Accessed: Jun. 16, 2023.

[8] E. Perry and K. Karousakis, "A comprehensive overview of global biodiversity finance," Organization for Economic Cooperation and Development (OECD). Apr. 2020. [Online]. Available: https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf

[9] "A. Krishnan, "[Explainer] What is biodiversity finance?," in Mongabay Series: Environment Explained, Environomy, Sep. 13, 2022. [Blog]. https://india.mongabay.com/2022/09/explainer-what-is-biodiversity-finance/ Accessed: May 8, 2023

[10] "State of finance for nature. Time to act: Doubling investment by 2025 and eliminating nature-negative finance flows," United Nations Environment Programme (UNEP), Nairobi, 2022. [Online]. Available: https://wedocs.unep.org/bitstream/handle/20.500.11822/41333/state_finance_nature.pdf?sequence=3

[11] A. Deutz, et al. "Financing Nature: Closing the global biodiversity financing gap," The Paulson Institute, The Nature Conservancy and the Cornell Atkinson Center for Sustainability, Report, 2020. [Online]. Available: https://www.paulsoninstitute.org/wp-content/uploads/2020/10/FINANCING-NATURE_Full-Report_Final-with-endorsements_101420.pdf

[12] "Final text of Kunming-Montreal Global Biodiversity Framework available in all languages," Convention on Biological Diversity, Montreal, Canada. Dec. 2022. [Online]. Available: https://prod.drupal.www.infra.cbd.int/sites/default/files/2022-12/221222-CBD-PressRelease-COP15-Final.pdf

[13] Taskforce on Nature-related Financial Disclosures. https://tnfd.global/ Accessed: Jun. 23, 2023.

[14] "Land Degradation Neutrality Fund. Impact Report 2021," Mirova, Report, 2021. [Online]. Available: https://www.mirova.com/sites/default/files/2021-07/LDN%20Report%202021.pdf

[15] S. Mcquaid and I. Fletcher, "Financing and business models guidebook," Connecting Nature, 2020. [Online]. Available: https://connectingnature.eu/sites/default/files/images/inline/Finance%20and%20Business%20Models%20Guidebook.pdf

[16] B. Blarel *et al.*, "Mobilizing private finance for nature," World Bank Group, Paper, Washington DC, United States of America, 2020. [Online]. Available: https://thedocs.worldbank.org/en/doc/916781601304630850-0120022020/original/FinanceforNature28Sepwebversion.pdf

[17] M. Riva, *et al.*, "Moving mountains: Unlocking private capital for biodiversity and ecosystems," The Biodiversity Finance Initiative, United Nations Development Programme (UNDP), New York, United States of America, 2020. [Online]. Available: https://www.biofin.org/sites/default/files/content/publications/BIOFIN%20-%20Moving%20Mountains%20-%20Unlocking%20private%20capital%20for%20biodiversity%20and%20ecosystems%20%28Web%20Version%29.pdf

[18] "Natural Capital Protocol," Natural Capital Coalition, 2016. [Online]. Available: https://naturalcapitalcoalition.org/wp-content/uploads/2018/05/NCC_Protocol_WEB_2016-07-12-1.pdf

[19] "Valuation of biodiversity benefits. Selected studies," Organization for Economic Cooperation and Development (OECD), Paris, Oct. 2001. [Online]. Available: https://doi.org/10.1787/9789264195844-en

[20] P. Dasgupta, "The economics of biodiversity: The Dasgupta review," HM Treasury, London, England, Feb. 2021. [Online]. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf

[21] D. Moran and C. Bann, "The valuation of biological diversity for national biodiversity action plans and strategies: a guide for trainers," United Nations Environment Program (UNEP), Guide, Mar. 2000. [Online]. Available: https://www.researchgate.net/profile/Camille-Bann/publication/237639874_The_Valuation_of_Biological_Diversity_for_National_Biodiversity_Action_Plans_and_Strategies_A_Guide_for_Trainers/links/56b3221908aed7ba3fee555c/The-Valuation-of-Biological-Diversity-for-National-Biodiversity-Action-Plans-and-Strategies-A-Guide-for-Trainers.pdf

[22] "Natural Capital for biodiversity policies: What, why and how," Capitals Coalition, Paper, 2021. [Online]. Available: https://capitalscoalition.org/wp-content/uploads/2021/04/Natural-capital-for-biodiversity-policy-%E2%80%94-FINAL-1.pdf

[23] "2019 Forum of the Standing Committee on Finance: Climate Finance and Sustainable Cities," Standing Committee on Finance, United Nations Framework Convention on Climate Change United Nations (UNFCCC), 2019. [Online]. Available: https://unfccc.int/sites/default/files/resource/SCF%20Forum%202019%20report_final.pdf

[24] J. Simmonds, "Biodiversity offsetting is contentious: here's an alternative," in International Union for Conservation of Nature (IUCN), Dec. 23, 2019. [Blog]. https://www.iucn.org/es/node/17404 Accessed: May 10, 2023

[25] "Tracking economic instruments and finance for biodiversity," Organization for Economic Cooperation and Development (OECD), Sep. 2021. [Online]. Available: https://www.oecd.org/environment/resources/biodiversity/tracking-economic-instruments-and-finance-for-biodiversity-2021.pdf

[26] M. Galović, "Forest Public Benefit Function Fee in Croatia," Institute for European Environmental Policy, Dec. 2016. [Online]. Available: https://ieep.eu/wp-content/uploads/2022/12/HR-Forest-Public-Benefit-Fee-final.pdf

[27] "Mobilizing funding for biodiversity conservation: A user-friendly training guide," Convention on Biological Diversity (CBD), Nov. 2001. [Online]. Available: https://www.cbd.int/doc/nbsap/finance/Guide_Tourism_Nov2001.pdf

[28] "An investment case for nature's benefits in Dar es Salaam," ICLEI Africa and ICLEI Cities Biodiversity Center (CBC), Oct. 2020. [Online]. Available: https://africa.iclei.org/wp-content/uploads/2020/11/DSM-urban-nature-investment-case_FINAL_2020.pdf

[29] T. Köllner, O. Schelske and I. Seidl, "Integrating biodiversity into Intergovernmental Fiscal Transfers based on Cantonal Benchmarking: a Swiss case study," Basic and Applied Ecology 3(4): pp 381-391, Jan. 2002. [Online]. Available: https://www.researchgate.net/publication/237149340_Integrating_biodiversity_into_intergovernmental_fiscal_transfers_based_on_cantonal_benchmarking_A_Swiss_case_study

[30] A. Illes, D. Russi, M. Kettunen and M. Robertson, "Innovative mechanisms for financing biodiversity conservation: experiences from Europe, final report in the context of the project 'Innovative financing mechanisms for biodiversity in Mexico'," Institute for European Environmental Policy, Brussels, Belgium, N°2015/368378, 2017. [Online]. Available: https://www.cirad.fr/en/view_pdf/6917

[31] "The blended finance playbook for Nature-Based Solutions," Earth Security, Jun. 2021. [Online]. Available: https://www.earthsecurity.org/reports/the-blended-finance-playbook-for-nature-based-solutions

[32] J. Smith, M. Samuelson, B. Libanda, D. Roe, and L. Alhassan, "Getting blended finance to where it's needed: The case of CBNRM Enterprises in Southern Africa," Land,11,637, Apr. 2022. [Online]. Available: https://www.mdpi.com/2073-445X/11/5/637

[33] P. Chahine and L. Liagre, "How can green bonds catalyse investment in biodiversity and sustainable use projects," Luxembourg Green Exchange and Global Landscapes Forum, 2020. [Online]. Available: https://www.globallandscapesforum.org/wp-content/uploads/2020/10/How-can-Green-Bonds-catalyse-investments-in-biodiversity-and-sustainable-land-use-projects-v12_Final.pdf

[34] A. Sönnerhed and S. Berg, "Green Bonds vs Conventional Bonds: Market efficiency test on green bond funds vs conventional bond funds when faced with external shocks causing stress," Jönköping International Business School, Jönköping University, Bachelor's Thesis, Sweden, 2021. [Online]. Available: https://www.diva-portal.org/smash/record.jsf?pid=diva2%3A1560126&dswid=-2065

[35] C. duPont, J. Levitt and L. Bilmes, "Green Bonds and Land Conservation: The Evolution of a New Financing Tool,"

Cambridge, Mass.: Harvard Environmental Economics Program, Discussion Paper 2016-67, January 2016. [Online]. Available: https://heep.hks.harvard.edu/files/heep/files/dp67_dupont-levitt-bilmes.pdf

[36] M. W. Brand, *et al*., "Environmental Impact Bonds: A common framework and looking ahead," Environmental Research Infrastructure and Sustainability, 1, 023001, Jul. 2021. [Online]. Available: https://iopscience.iop.org/article/10.1088/2634-4505/ac0b2c/pdf

[37] D. Hall, "Greening the future: A case for environmental impact bonds," Policy Quarterly 13 (2), pp 43-44, May 2017. [Online]. Available: https://ojs.victoria.ac.nz/pq/article/view/4662/4146

[38] D. Hall, S. Lindsay and S. Judd, "Permanent Forest Bonds: a pioneering environmental impact bond for Aotearoa New Zealand," Institute for Governance and Policy Studies, Victoria University of Wellington, Paper, Wellington, New Zealand, Feb. 2017. [Online]. Available: https://www.victoria.ac.nz/__data/assets/pdf_file/0009/1175247/WP17-01-Permanent-forest-bondsv2.pdf

[39] S. Brand and J, Steinbrecher, "Sustainable finance in German municipalities: Can green municipal loans break the ice?," KfW Research, Focus on Economics, No. 339, 29, Jul. 2021. [Online]. Available: https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Fokus-Volkswirtschaft/Fokus-englische-Dateien/Fokus-2021-EN/Focus-No.-339-July-2021-Sustainable-finance.pdf

[40] J. Sun, F. Wang, H. Yin and B. Zhang, "Money talks: the environmental impact of China's green credit policy," Journal of Policy Analysis and Management, 38(3), 653-680, Apr. 2019. [Online]. Available: https://onlinelibrary.wiley.com/doi/full/10.1002/pam.22137?casa_token=SqG-01sy52RQAAAAA%3AV85FeISV2knGwYTE-Gr-eWzTw7nrM0kXDiDzFZzeud-gWiT-1TLV2P95TNSapskuF6lOnL8LNd-hU1HsGeD

[41] "Ghent: Crowdfunding platform realising climate change adaptation through urban greening," Ghent crowdfunding platform in Climate-ADAPT, Sep. 2016. [Online]. Available: https://climate-adapt.eea.europa.eu/en/metadata/case-studies/ghent-crowdfunding-platform-realising-climate-change-adaptation-through-urban-greening/

[42] S. Wunder, "Revisiting the Concept of Payments for Environmental Services," Ecological Economics, Vol. 117, 234-243, Sep. 2015. [Online]. Available: https://www.sciencedirect.com/science/article/abs/pii/S0921800914002961

[43] "Markets and Payments for Environmental Services," International Institute for Environment and Development (IIED), Project 2008. https://www.iied.org/markets-payments-for-environmental-services Accessed: Apr. 25, 2023.

[44] "Paying Foresters to Provide Ecosystem Services?," World Wide Fund for Nature (WWF), Report, 2022. [Online]. Available: https://wwfint.awsassets.panda.org/downloads/paying_foresters_to_provide_es.pdf

[45] E. Fripp, "Payments for Ecosystem Services (PES): A practical guide to assessing the feasibility of PES projects," Center for International Forestry Research (CIFOR), Bogor Barat, Indonesia, 2014. [Online]. Available: https://www.cifor.org/publications/pdf_files/Books/BFripp1401.pdf

[46] A. Pating and P. Trousdale, "Some practical cases of Biodiversity Finance," in Natural Resources Defense Council (NRDC), Sep. 08, 2021. [Blog]. https://www.nrdc.org/bio/alfonso-pating/some-practical-cases-biodiversity-finance#_ftn1 Accessed: May 12, 2023.

[47] "Fresh look-back at a Payment for Ecosystem Services (PES) project in Uganda," in United Nations Environmental Program (UNEP), Aug. 2016. [Blog]. https://www.unep.org/news-and-stories/story/fresh-look-back-payment-ecosystem-services-pes-project-uganda Accessed: May 20, 2023.

[48] "Impact Report: Investing in nature," Nature Vest, The Nature Conservancy, Arlington, United States of America, Report, 2022. [Online]. Available: https://www.nature.org/content/dam/tnc/nature/en/documents/NatureVest-2022-Impact-Report.pdf

[49] M. Perrin, "Impact-driven financing and investment strategies for urban regeneration," Clever Cities, Factsheet 3, H2020 grant no. 776604, 2018. [Online]. Available: https://clevercities.eu/file-admin/user_upload/Resources/Clever_Cities_Factsheet_3_WEB2_compressed.pdf

[50] "A Beginner's Guide to Biodiversity Offsetting," Ecology by Design. [Blog] https://www.ecologybydesign.co.uk/ecology-resources/biodiversity-offsetting Accessed: Jun. 16, 2023.

[51] "Biodiversity Offsets", World Bank Group, Washington DC, United States of America, Oct. 2016. [Online]. Available: https://elibrary.worldbank.org/doi/abs/10.1596/25758

[52] J. Simmonds, *et al*., "Moving from biodiversity offsets to a target-based approach for ecological compensation," Conversation Letters, Vol. 13, Issue 2, Wiley Periodicals, Dec. 2019. [Online]. Available: https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/conl.12695

[53] A. Gordon, *et al.*, "Assessing the impacts of biodiversity offset policies," Environmental Modelling & Software, Vol. 26, Issue 12, pp. 1481-1488, Dec. 2011. [Online]. Available: https://www.sciencedirect.com/science/article/abs/pii/S1364815211001824

[54] D. Meyers, *et al.*, "The 2016 BIOFIN Workbook: Mobilizing resources for biodiversity and sustainable development," The Biodiversity Finance Initiative, United Nations Development Programme (UNDP), New York, United States of America, 2016. [Online]. Available: https://www.biofin.org/sites/default/files/content/publications/undp-biofin-web_0.pdf

[55] R. Sucheran and L. Arulappan, "Eco-labels in the tourism sector in South Africa: benefits and barriers," African Journal of Hospitality, Tourism and Leisure, Vol. 9, Issue 9 (6), pp. 979-996, Jan. 2020. [Online]. Available: https://openscholar.dut.ac.za/bitstream/10321/3711/2/ECOLABELS%202020.pdf

[56] R. Soutar and F. Koop, "Explainer: What are debt-for-nature swaps?," in Dialogo Chino, Nov. 2, 2021. [Blog]. https://dialogochino.net/en/trade-investment/47862-explainer-what-is-debt-for-nature-swap/ Accessed: May 25, 2023.

[57] C. K. Gockel and L. C. Gray, "Debt-for-Nature Swaps in action: Two case studies in Peru," Ecology and Society, Vol. 16, No. 3, Sep. 2011. [Online]. Available: https://www.jstor.org/stable/26268934

[58] B. Spergel and P. Taïeb, "Rapid review of conservation trust funds," Conservation Finance Alliance, Second Edition, May 2008. [Online]. Available: https://www.cbd.int/financial/trustfunds/g-rapidassess.pdf

[59] B. Spergel and K. Mikitin, "Practice standards for conservation trust funds," Conservation Finance Alliance, Dec. 2013. [Online]. Available: http://www.dcnanature.org/wp-content/uploads/fundraising/CTF-Practice-Standards.pdf

[60] A. Berghöffer, et al., "Enhancing the financial sustainability of biodiversity conservation," Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Nov. 2016. [Online]. Available: https://

www.giz.de/de/downloads/2016_GIZ%20Discussion%20Brief%20Biodiv%20Financing%20final.pdf

[61] "Colombia - National Protected Areas Conservation Trust Fund Project," World Bank Group, Vol. 1, Report N. ICR2533, Washington DC, United States of America, Apr. 2015. [Online]. Available: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/691301468191333797/colombia-national-protected-areas-conservation-trust-fund-project

[62] S. Cook and S. Holiday, "Five ways to foster insurance solutions for biodiversity," in Green Finance Platform, May 2022. [Blog]. https://www.greenfinanceplatform.org/blog/five-ways-foster-insurance-solutions-biodiversity Accessed: Jun. 26, 2023.

[63] "Private insurance policies launched to protect elephants in Kenya and Sri Lanka," International Institute for Environment and Development (IIED), Press release, Oct. 2022. [Online]. Available: https://www.iied.org/private-insurance-policies-launched-protect-elephants-kenya-sri-lanka

[64] O. Boiral and I. Heras-Saizarbitoria, "Managing Biodiversity Through Stakeholder Involvement: Why, who, and for what initiatives?," Journal of Business Ethics, Vol. 140(3), pp. 403-421, Springer, Feb. 2017. [Online]. Available: https://www.jstor.org/stable/44164302

[65] D. Sequeira and M. Warner, "Stakeholder engagement: A good Practice Handbook for companies doing business in emerging markets," International Finance Corporation (IFC), World Bank Group, Washington, United States of America, May 2007. [Online]. Available: https://www.ifc.org/en/insights-reports/2000/publications-handbook-stakeholderengagement--wci--1319577185063

[66] "Investing in Nature: financing conservation and Nature-based Solutions," European Investment Bank (EIB), Luxembourg, 2021. [Online]. Available: https://www.eib.org/attachments/pj/ncff-invest-nature-report-en.pdf

[67] "BIOFIN Catalogue of Finance Solutions," The Biodiversity Finance Initiative, United Nations Development Programme (UNDP). https://www.biofin.org/finance-solutions Accessed: Jul. 12, 2023.

Annex I: Stakeholders identification checklist

The following checklist has been extracted from CEPA (2008). It can be adapted according to the LRG and the sector of the project.

Primary Stakeholders

Whose permission, approval or financial support is needed to reach the goal?

- ☐ Regional Nature Conservation Authority
- ☐ Ministry of Environment
- ☐ Ministry of Forestry
- ☐ Ministry of Regional Planning

Who is directly affected by the plan or activity?

- ☐ Landowners and or residents in the forest
- ☐ Forestry companies
- ☐ Tourism operators
- ☐ Recreational and other users (hunters, bird watchers, bikers, hikers, riders etc.)

Secondary Stakeholders

Who is indirectly affected by the plan?

- ☐ Local business
- ☐ Landowners and or residents outside the protected area
- ☐ Environmental NGOs

Tertiary Stakeholders

Who is not involved or affected by the plan, but can influence opinions either for or against it?

- ☐ Local opinion leaders (religious leaders, business or trade union leaders, teachers, local celebrities)
- ☐ Local media
- ☐ Ecology departments of universities, research institutes
- ☐ National media: through environmental inserts in newspapers or special programs

Annex II: Project feasibility checklist

Location/site feasibility

- ☐ Potential site has been identified for its suitability for the specific project
- ☐ The ownership has been confirmed
- ☐ Rights of access have been assessed
- ☐ Any environmental/social impacts have been identified
- ☐ Land access mechanisms e.g. leases have been identified
- ☐ Preparations for the site are assessed e.g. clearing areas
- ☐ Available infrastructure e.g. roads, electrical lines, etc.

Technical considerations

- ☐ Conduct techno-economic analyses to inform what form the project can take, and what technologies are best suited, having considered various alternatives
- ☐ Risks have been identified as well as mitigation measures
- ☐ Non-financial impacts and outcomes of the project have been assessed through specialist studies (e.g. social and environmental impact assessments)
- ☐ Relevant assessments conducted (e.g. climate feasibility study, technical analysis, biodiversity assessment, climate risk and vulnerability assessment for the area)

Financial

- ☐ Market surveys are conducted
- ☐ The project's capital and operational expenditures under different scenarios are calculated
- ☐ Potential project revenues, return of investments are quantified (financial model)
- ☐ Any other income lines are identified
- ☐ Relevant analysis and studies (e.g. preliminary cost-benefit analysis, investment case, financial feasibility analysis, financial needs assessment, finance plan for biodiversity)

Long-term sustainability

- ☐ Political commitment secured
- ☐ Local beneficial impacts of the project are identified
- ☐ Stakeholder analysis conducted and stakeholders engaged
- ☐ Monitoring processes and evaluation criteria are defined
- ☐ The replicability or scalability of the project is defined and planned

In order to be considered a biodiversity finance, investments need to fulfill the following criteria (IFC, 2020):

1. **Alignment to frameworks and Sustainable Development Goals (SDGs):** The project type must be consistent to the categories of the Green Bond Principles and Green Loan Principles. It should also contribute to either Sustainable Development Goal 14 or 15, with outputs and outcomes directly related to one or more of the target indicators of these Sustainable Development Goals.

2. **No material risk:** The project can only be labeled biodiversity finance if its activities do not introduce material risks to other priority environmental areas of the Sustainable Development Goals, including: SDG2 - Zero hunger; SDG6 - Clean water and sanitation; SDG7 - Affordable and clean energy; SDG12 - Responsible consumption and production; SDG13: Climate action.

3. **Implementation of ESG safeguards and standards:** The project must clearly follow internationally accepted sustainability standards in order to minimize and manage any adverse environmental and social impacts, including biodiversity loss. Such good practice standards are expected to be followed in addition to national requirements. Industry-specific sustainability standards, as well as certain specific product standards, may also be applied for a biodiversity finance investment above national requirements.

4. **Help to revert or eliminate biodiversity loss:** The project or elements of the project must be designed to minimize or eliminate one or several of the following key drivers of biodiversity loss such as pollution, unsustainable use of nature and climate change.

ICLEI
Local Governments for Sustainability

TAP
Transformative Actions Program

INTERACT-Bio
Integrated action on biodiversity

www.tap-potential.org

www.interactbio.iclei.org