



INTERACT-Bio
Integrated action on biodiversity

Investing in Urban Nature: A Toolkit for Cities – A Global South Perspective

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Acknowledgements and Citation

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Cover photo: A glimpse of Gangtok. Photo credit: Monalisa Sen.

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Foreword by ICLEI Africa

The year 2020 was set to be the super year for biodiversity, with the Biodiversity Conference of the Parties (COP 15) planned to take place in Kunming, China. However, with the onset of the COVID-19 pandemic, the world was forced into lockdown. This brought the importance and value of nature to human health and well-being to the forefront. Humankind's critical dependence on nature has never been more apparent.

Along with this growing realisation, we are also made aware by a number of convincing, evidence-based resources^{1,2} that we are putting increasing pressure on nature and biodiversity. In doing so, we are undermining nature's integrity and ability to provide us with the benefits which we require to sustain ourselves and to prosper. It has been estimated that more than half of the global Gross Domestic Product (GDP) depends on biodiversity and the services which it delivers. Yet, one of the major challenges is that biodiversity and nature are typically undervalued and therefore not adequately accounted for in our economies. This is however, slowly beginning to change, with increasing work on the financial assessments and valuations of nature³. These types of assessments highlight nature's critical contribution to economies and make the value of nature more visible and tangible. As the recent Dasgupta Review⁴ states, the solutions to addressing the loss of biodiversity starts with us understanding and accepting that our economies are deeply embedded within nature.

Despite this, recent research by the Biodiversity Finance Initiative (BIOFIN) shows that we are currently only directing a small percentage of the total estimated financial support needed to address the threats to nature and biodiversity. Based on the World Economic Forums Global Risks Assessment, biodiversity loss in one of the top five highest risks to humanity and failure to mobilise resources and act in addressing this risk, is currently one of the biggest threats to humanity.

¹ IPBES (2019) [Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#). S. Díaz; J. Settele; E. Brondízio and H.T. Ngo (Eds). Bonn. Germany. IPBES Secretariat.

² WWF (2020) [Living Planet Report 2020 - Bending the curve of biodiversity loss](#). Almond, R.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland.

³ See for example the seminal work: TEEB (2010), [The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB](#).

⁴ Dasgupta, P. (2021), [The Economics of Biodiversity: The Dasgupta Review](#). Abridged Version. (London: HM Treasury).

As our understanding of biodiversity finances grows, the need to identify innovative mechanisms to finance the maintenance, recovery, conservation and protection of nature and biodiversity is critical. Various tools have been developed to help us identify innovative mechanisms to unlock financing for biodiversity. This Investment Case Toolkit, developed as part of the [INTERACT-Bio project](#), is one such tool. It illustrates approaches through which financial resources can be mobilised, thereby decreasing the pressure on domestic budgets. The toolkit was designed with fast-growing and developing economies in mind, as these are the places where wild nature and biodiversity are often intact and most at threat. It provides a guide and inspiration for city and regional governments in the global south to build an investment case that can be used to peak interest and attract financial resources to protect, conserve and manage biodiversity. Unlocking financial resources is critical in order to secure nature's benefits to society and to support nature's contribution to the growth and advancement of urban economies.



Ms Kobie Brand. ICLEI Africa: Regional Director; and ICLEI Deputy Secretary General.

Executive Summary

The INTERACT-Bio project facilitated interventions at the subnational government level to promote the institutional integration necessary for effective realisation of the benefits of urban NBSs across sectors and levels of government. Urban nature mainstreaming approaches included the development of Local Biodiversity Strategies and Action Plans (LBSAPs), outreach, enhancing national-subnational dialogue and collaboration, investment cases and pilot projects. It was a requirement for each project region of implementation, i.e. Brazil, India and Tanzania, to develop an investment case for one city. Although each investment case is a useful case in its own right, there was a need to create this toolkit to present a more widely applicable guide to investment in urban nature, with emphasis on the Global South context. When this Toolkit was developed, the investment case for the city of Dar es Salaam in Tanzania was well advanced. The Toolkit draws from the Dar es Salaam experience and from investment lessons learnt in Brazil and India, and the global South more generally.

The Toolkit starts out by positioning an investment case within a project life span perspective, indicating where the investment case fits within a wider process that ultimately leads to project implementation. Types of investment cases are then covered to highlight the importance of articulating the purpose of an investment case. The Toolkit then addresses the approach an urban nature investment case as defined within the scope and purpose of the INTERACT-Bio project. This section includes guidance around (1) identifying the ecosystem services opportunities, (2) determining the value proposition and funding mechanism of the nature-based solution by accessing the ecosystem services addressed and the available funding mechanisms and (3) the approach to developing the investment case aimed at the entity that funds/supports/ champions the nature-based solution. The section following this outlines a number of tools that can be used to develop the investment case. This includes tools to (1) define project scope, (2) articulate the importance of biodiversity, (3) articulate the project rationale, (4) tools to articulate project location, (5) tools to think about the organisational framework (e.g. stakeholders and their interests and the institutional structure required to realise the investment, (6) tools to define the costs and the benefits of the investment, and (7) tools to define the timing of the investment. Concluding insights wrap up the Toolkit. These final remarks emphasise the importance of consultation with relevant stakeholders, trade-offs that may be typical as competing needs are considered, the persuasive power of making contextual links between nature and human well-being in urban settings, the value of site visits and articulating the benefits of ecosystems in terms that people can relate to and that will make a difference in their everyday lives.

1. Introduction

1.1 Background

In 2019, ICLEI – Local Governments for Sustainability – Africa Secretariat commissioned I and M Futureneer Advisors Pty Ltd (Futureneer Advisors) and MCA Urban and Environmental Planners (MCA) to develop a business case for investment in urban nature-based solutions in Dar es Salaam, as one of the major outputs of the INTERACT-Bio – integrated action on biodiversity Project. This project, which is funded by German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through the International Climate Initiative (IKI), aims to provide fast-growing city regions in the Global South with nature-based solutions and associated long-term benefits.

One of the needs identified through the project included the formulation of an approach to compile an investment case that could be utilised by other cities to attract multiple sources of funding for nature-based solutions in an urban environment. This approach is summarised in Section 2.

This approach was utilised to develop an investment case for the rehabilitation of the Botanical Garden in Dar es Salaam. During the course of this process various insights were gained for investing in nature-based solutions and the tools that could be used. This investment case is used as a case study to illustrate some of the key steps and concepts in this Toolkit.

1.2 Purpose of the Toolkit

The purpose of this document is to outline some of the tools that could be utilised to formulate an investment case for nature-based solutions, particularly in an urban environment. The Toolkit incorporates the lessons learned in developing the investment case for the rehabilitation of the Botanical Garden in Dar es Salaam.

The Toolkit could be used by various stakeholders but is aimed primarily at Cities and City Regions in developing economy countries.

It should be noted that this document does not aim to provide the tools for the complete project development life cycle, but is aimed at the development of the investment case. Neither does it attempt to provide an exhaustive set of tools, but merely captures those tools that provided useful in the context of fast-growing cities in a developing economy.

A breakdown of the various phases in the project development life cycle is provided in Section 2.

1.3 Urban nature terminology

Many terms are used in relation to nature in the urban context, such as urban biodiversity, urban nature, nature-based solutions, green infrastructure and ecosystem services. These terms are all related, although they have different origins and may be interpreted differently. For the purpose of this Toolkit, we mainly use the terms ecosystem services and nature-based solutions to describe aspects of urban nature.

‘Nature-based solutions’ is a popular term because it is a broad, easily understood term. Nature-based solutions in particular, has gained traction due to its orientation towards mitigating urban issues such as urban heat and pollution.

There are several definitions of nature-based solutions, but the most commonly accepted one is the International Union for the Conservation of Nature (Cohen-Shacham et al., IUCN, 2016: p. xii) definition: “actions to protect, sustainably manage and restore natural or modified ecosystems, which address societal challenges (e.g. climate change, food and water security) effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits.” Nature-based solutions is an umbrella term for ecosystem related approaches to address various societal challenges.



FIGURE 1 NATURE-BASED SOLUTIONS (IUCN, 2016 P.11)

The IUCN recently published a global standard for nature-based solutions (IUCN, 2020) which provides structure, according to eight criteria, to help conceptualise and implement nature-based solutions. For example, economic viability is one of the eight criteria for nature-based solutions.

In this toolkit, we also use ecosystem services concepts (i.e. the benefits that humans derive from nature) to describe the attributes of nature that require investment. The ecosystem services approach is especially useful in the urban context because it recognises the value of both natural and man-made or ‘designed and engineered’ nature. Importantly, the ecosystem services approach provides a structured way to illustrate how nature critically underpins human well-being, health and prosperity. The language and structure of ecosystem services facilitates economic valuation and analysis of urban nature, an important aspect when building a case to attract investment in urban nature. The Economics of Ecosystems and Biodiversity (TEEB) manual for cities is a useful resource in this regard (TEEB, 2011).

2. Defining an Investment Case

2.1 Introduction

A typical project development life cycle includes various stages as depicted in Figure 2.



FIGURE 2: PROJECT DEVELOPMENT LIFE CYCLE

In broad terms the phases include:

- Formulation of a range of ideas and concepts around ecosystem services and nature-based solutions that could be implemented to address a variety of social, economic and biodiversity needs;
- Compilation of an investment case (also called a pre-feasibility) to identify and affirm the most viable idea or concept;
- Compilation of a full feasibility study that includes all the relevant technical studies and detail to fully formulate the most viable project and its implementation;
- Compilation of a funding proposal to obtain the relevant funds to implement the project; and
- The implementation of the project.

This Toolkit focusses on tools for the investment case phase (i.e. the second arrow of Figure 2) of the project development life cycle.

2.2 Different Types of Investment Cases

There are different types or approaches to investment cases and, in deciding on the appropriate type, it is important to define the purpose of an investment case and understand where it fits in the project development life cycle.

Different types of investment cases include investment cases for different types of development that requires a different approach, for example, property development, financial investment, manufacturing process or nature-based solutions.

The approach and focus of the investment case would be different depending on the type of investment case, for example:

- An investment case for a property development may focus on the maximum space that could be developed, the building cost, the rental rates and thus the financial return on investment. For example, an investment case to build a block of apartments would focus on how many apartments would need to be developed at different sizes, how much the apartment block would cost to build, how much rent could be earned for the apartments of different sizes and thus what the financial return would be based on the building cost of the apartment block and the rent that could be earned;
- An investment case for a financial investment may focus on the structure of the financial investment, the risk for investors and the financial return on investment. For example, the investment case for the investment in a bonds issued by government would focus on the structure of the bonds, namely the size of the bond, the length of the bond repayment and the interest rate that will be paid on the bond. The risk for investors will include whether the government is likely to default on the bond and whether there is a resale market for the bond. The financial return on investment would depend on the capital to be invested in the bond and the interest that would be paid;
- An investment case for a manufacturing process may focus on whether it is technically and physically possible and the efficiencies over other processes that could be obtained. For example the investment case for the manufacture of clothes would focus on whether the manufactures would have access to skilled labour, availability and cost of suitable materials, and the machines used in clothing manufacturing to provide the manufacturer with the ability to produce the clothing more efficiently i.e. faster and at a better price; and
- An investment case for a nature-based solution may focus on the benefit to stakeholders and savings and/or revenue generation that the nature-based solution could ensure over the long-term rather than the initial development cost. For example, the investment case for the rehabilitation of a botanical garden would focus on the health and wellness benefits that the rehabilitated botanical garden could bring, such as the reduction of the temperature in the city by providing a green space, tree canopy and the feeling of wellbeing provided to office workers who would have a green space to enjoy during their lunch break.

At the start of the project development life cycle, stakeholders will be faced with various potential project ideas and concepts that are in various stages of development. Some projects may already be at the investment case stage while others would only be broad concepts. The challenge would be to identify the most needed and most viable project to develop further. Given that there may be numerous potential projects, the process to find the most needed and most viable project should be efficient and not time consuming.

Guiding principles during the initial phase of an investment case would thus be to:

- Avoid in-depth studies and analysis of primarily unfeasible project ideas;
- Shortlist the most feasible ideas to focus time and resources;
- Consult with key stakeholders to deliberate the options for investment cases;
- Develop an understanding of the requirements of the proposed projects and their match to the capacity of your organisation;
- Test the maturity of project ideas and to check if they address the most imperative needs effectively while matching with your organizational resources and capabilities;
- Refine solutions and put them in a concrete project format; and
- Find the best compromise between most needed and most viable project concepts.

The investment case approach provides organisations with a structure to organise thoughts and to review proposals structurally. The investment case should not include long reports and extensive details as its main focus is identifying the most needed and viable project from a range of projects and concepts. Detailed technical studies should be conducted during the full feasibility study on the most needed and viable project rather than conducting detailed technical studies on a range of projects and concepts which will not be developed further.

Sometimes a compromise must be reached between the most needed and most viable project concepts. This means that a project such as flood mitigation would be most needed to ensure sustainable livelihoods of communities, but the project will never generate revenue in order to sustain itself and could thus be considered to not be financially viable.

The compromise will depend on the goals and objectives of the project. For example, in the goals and objectives of the project it could be more important to ensure sustainable livelihoods than generating revenue, which may require more continuous funding to ensure that the project is sustainable. Projects that are more financially sustainable would be able to generate their own revenue and thus not require continuous funding to ensure that the project is sustainable.

2.3 Toolkit Structure

In developing an investment case for nature-based solutions in Dar es Salaam, various methodologies for the compilation of an investment case were considered and analysed, to formulate an approach specific to investment in urban nature-based solutions. During the formulation of the approach, various tools were identified to perform the steps and tasks in the formulated approach.

The formulated approach is summarised below in Section 2.4, while the remainder of this Toolkit provides a description of a range of tools that could be utilised to compile the formulated investment case as summarised in Section 2.4. The Toolkit is structured according to the key questions of “What, Why, Where, Who, How, How Much, When” that should be addressed in the investment case.

2.4 ICLEI Urban Biodiversity Investment Business Case Approach

The investment case approach formulated for investing in nature-based solutions in Dar es Salaam includes 3 main steps:

- Step 1: Identify the ecosystem service opportunities and the particular urban issues that can be addressed through nature-based solutions;
- Step 2: Determine the value proposition and appropriate funding mechanism of the nature-based solution by accessing/evaluating the ecosystem services addressed and the available funding mechanisms; and
- Step 3: Develop the investment case aimed at the entity that funds/supports/ champions the nature-based solution based on the particular value proposition.

The approach is grounded in continuous consultation and engagement with the public and private sectors and communities to ensure co-design, buy-in and knowledge transfer.

The 3 main steps and key activities are summarised below:

Step 1: Identify the ecosystem service opportunities

Task 1.1: Analyse how ecosystem services relate to urban issues and their management

- What are the relevant urban issues?
- What are the important ecosystem services and what is their role in addressing important urban issues?
- Do the different ecosystem services conflict with each other?

Task 1.2: Determine providers, beneficiaries and degraders of ecosystem services

- Who is an ecosystem provider?
- Who is an ecosystem beneficiary?
- Who is an ecosystem degrader?

Box 2.1: Defining Ecosystem Providers, Beneficiaries and Degraders

An ecosystem provider is defined as an entity that conserves biodiversity, manages the ecosystem or otherwise contributes to ecosystem provision. For example, in the case of a fish ecosystem, the Department of Fisheries could be seen as an ecosystem provider as they manage the ecosystem by setting the fishing quotas and enforcing any fishing regulations.

An ecosystem beneficiary is defined as an entity that uses or depends on ecosystem services or have an indirect interest in their provision. For example, the community would be an ecosystem beneficiary of the fish ecosystem as they benefit from the food that it provides.

An ecosystem degrader is defined as an entity that damages, depletes, or destroys ecosystems or otherwise has a negative impact on their provision. For example, an oil refinery that pollutes the fishing waters would be an ecosystem degrader for the fish ecosystem.

Defining who is an ecosystem provider, beneficiary and /or degrader can be tricky as, in some cases, it could be the same entity. For example, in the case of the fish ecosystem, the fishermen may be an ecosystem provider if they sustainably utilise and manage a fish ecosystem by fishing responsibly. The fishermen can also be seen as an ecosystem beneficiary as they receive income from the sale of their catch. The fishermen could also be seen as an ecosystem degrader if they fish more than their quota and pollute the water. It is thus important to understand all the ecosystem providers, beneficiaries and/or degraders and how they are affected by and what effect they have on the ecosystem.

Task 1.3: Assess gaps in ecosystem service provision and imbalances in costs and benefits

- Which ecosystem provider bears costs for ecosystem stewardship that they do not recover?
- Which ecosystem service beneficiaries receive benefits for free? Which ones are interested in more ecosystem service provision?
- Which degraders are not held liable and why?

Task 1.4: Identify ecosystem service opportunities

- Stewards earn principle: Can we make sure that ecosystem providers are rewarded in line with the benefits they generate and the costs they incur?
- Beneficiary pays principle: Can we make sure that ecosystem beneficiaries contribute to the costs of conservation in line with the benefits they enjoy?
- Polluter pays principle: Can we make sure that ecosystem degraders are penalized or provide compensation in line with the damages they cause?
- Innovation principle: Can we tap into innovative business opportunities through which local communities may benefit from conservation?

Task 1.5: Check for appropriateness of ecosystem service opportunities

- Will this opportunity generate net livelihood benefits for those concerned, in both qualitative and quantitative terms? Are there no (undesired) side effects for other groups?
- Are possible sources of opposition understood and can they be dealt with?
- Can this opportunity be expected to have desirable ecological consequences, considering all relevant aspects of biodiversity and ecosystem services?
- Is this opportunity compatible with the legal and institutional setting?
- Is this opportunity appropriate according to ethical considerations and within the socio-cultural setting?
- Is there a risk of undermining existing motivations to preserve nature and if so, is this risk understood and considered?

Task 1.6: Identify economic instruments

- Positive incentives and rewards to motivate ecosystem services provision are used in payment for ecosystem services (provider side)/green subsidies/conservation easements/debt-for-nature swaps/payment for ecosystem services (PES) schemes;
- Contributions from ecosystem beneficiaries to finance ecosystem provision are used in payment for ecosystem services (user side)/charges & fees/ corporate sponsorship;
- Negative incentives and compensations for harming ecosystem services are used in legal liabilities & fines/(Pigouvian) taxes/offsetting schemes;
- Unlocking new potentials to benefit from conservation can be reached with eco-labelling/ ecological products & eco-tourism/microcredit/green investment;

Step 2: Value Proposition and Funding Mechanisms for Nature-based Solutions

This step determines the value proposition and funding mechanism of the nature-based solution by accessing the ecosystem services addressed and the available funding mechanisms. It builds on Task 1.6 and defines the funding mechanism to be included in the investment case.

Task 2.1: Determine the monetary value of the ecosystem service

- Nature's benefits are mostly provided without any monetary cost and are thus generally taken for granted.

Box 2.2: Why it is important to understand the value of nature

The World Economic Forum (WEF) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) have identified biodiversity loss as one of the main threats to global economic prosperity. The WEF's most recent Global Risks Report (2020), ranked biodiversity loss and ecosystem collapse in the top five risks. For the first time, all the top five global risks, in terms of likelihood and severity of impact, were environmental. This high-level warning specifies that any further loss of natural habitats and biodiversity will cause extensive and costly flooding, climate change, disease emergence and ill health, clean water shortages, loss of crop pollination, decline in productivity, and numerous other risks. All of these negative outcomes are the consequence of degrading the natural infrastructure that supports human economic activity and wellbeing. Just as diversity within a portfolio of financial assets reduces risk and uncertainty, diversity within a portfolio of natural assets – biodiversity – directly and indirectly increases Nature's resilience to shocks, reducing risks to the services on which we rely.

- Ecosystem valuation is a methodology designed to assign an estimated value (either monetary, biophysical, or other) to an **ecosystem** and/or its **ecosystem services**.
- Natural Capital Accounts is a tool to help measure the full extent of a country's natural assets. Through the process a country / city can calculate the total stocks of natural resources (natural capital), flows (ecosystems services) and value (benefits to business and society). It provides a perspective on the links between the economy and the environment).

Box 2.3: Establishing Natural Capital Accounts

The UN Statistical Commission adopted the System for Environmental and Economic Accounts (SEEA) as a statistical standard for all countries in 2012, as a common methodology to measure a country's wealth as a combination of produced infrastructure, social and human natural resources (i.e. natural capital). 18 African countries expressed unanimous support for the creation of a Community of Practice on Natural Capital Accounting in Africa, following the African Forum on Natural Capital Accounting held in Kampala, Uganda on November 21, 2019. The Community of Practice was launched in July 2020.

Task 2.2: Determine the value proposition of the ecosystem service to potential funders to demonstrate why they should be funding the ecosystem service

- In general, a value proposition demonstrates why and how a product or service is of benefit to a particular party or stakeholder taking into account the quantifiable and unquantifiable cost and benefits of the product or service;
- The value proposition of an ecosystem service can be determined by demonstrating nature's contribution to people (NCP) and therefore how nature improves their quality of life. This quality of life may vary greatly across different societies and groups within societies and may comprise livelihood security such as access to food and water as well as a social relationship and cultural identity of living in harmony with nature⁵

Task 2.3: Determine the funding mechanism to use - utilising the economic instruments identified in Task 1.6 and addressing the following questions

- Identify least-cost policy options (What instruments are most likely to meet the intended goals? Identify least-cost policy options and mechanisms and areas for intervention to determine policy priorities and sequencing)
- Identify safeguards (What are the potential environmental trade-offs? Put in place environmental safeguards to address these as needed. What are the likely distributional implications of the instrument? (Consider social safeguards to address these as needed).
- Identify capacity needs (What are the governance and capacity needs to effectively implement these instruments? Are the circumstances/conditions needed for these to be effective currently in place?)

⁵ Valuing nature's contribution to people: the IPBES approach - <https://www.sciencedirect.com/science/article/pii/S1877343517300040> and Nature's Contribution to People (NCP) - Article by IPBES Experts in Science <https://ipbes.net/news/natures-contributions-people-ncp-article-ipbes-experts-science>

Box 2.4: What are Safeguards?

Safeguards (or standards) are used by development institutions, international treaties and agencies to refer to policies, standards and operational procedures designed to first identify and then try to avoid, mitigate and minimize adverse environmental and social impacts that may arise in the implementation of development projects. ESS also have a pro-active dimension to try to increase chances that development projects deliver better outcomes for people and the environment. Consideration of safeguards is important as it will depend on what funding/development institution the investment case will be aimed at as the funding/development institutions have different safeguards requirements.

Step 3: Investment Case

The investment case provides the answers to the questions: **“What, Why, Where, Who, How, How Much, When”**.

The investment case should be aimed at the potential funder/champion i.e. the answer to the question “Why” should speak to addressing the priorities of the funder/champion. The funder and champion of the project may not always be the same entity as the champion could be a funder but could also be someone who is influential and who supports the desired outcome without providing funding for the project. The champion could be a Politician, Community Leader, Celebrity, or Influential Entrepreneur that supports the project without providing funding.

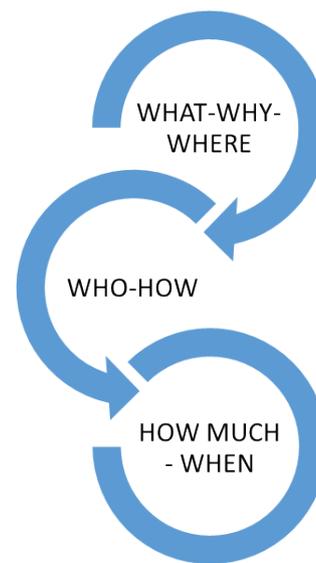


FIGURE 3 INVESTMENT CASE ELEMENTS

Task 3.1: The executive summary provides a concise summary of the salient points of the investment case and should answer each of the questions: “What, Why, How, How Much, Who, Where, When”.

Task 3.2: The project description answers the question “What, Why, Where”. It incorporates the work conducted during Step 1. It should include a project description, project rationale and value proposition. The value proposition should address the priorities of the funder/champion identified in Task 2.2.

Task 3.3: The organisational plan/framework answers the question “Who, How”. It incorporates the work conducted during Task 2.2 and Task 2.3. It details the stakeholders, the project funder/champion, the institutional structure required and the regulatory environment.

Task 3.4: The cost benefit analysis answers the question “How Much”. It incorporates the work conducted during Step 2 and can include case studies to provide proof of the costs and benefits of nature-based solutions. The analysis can include the following:

- A market assessment to indicate whether there will be demand for the nature-based solution i.e. if the solution is provided, will people use it, how much will they use it, and will it be to their benefit.
- A financial assessment to indicate whether the nature-based solution would be affordable and/or provide a return on investment. The cost of the nature-based solution (Task 2.1) needs to be clearly defined and linked to the identified funding mechanism (Task 2.3).
- An economic assessment to indicate whether the nature-based solution would provide value for money. This analysis is more than a financial analysis as it includes monetary and non-monetary costs and benefits.

Box 2.5: Monetary and Non-Monetary Costs and Benefits

The monetary costs and benefits refer to costs and benefits where there is a direct flow of money, while non-monetary costs and benefits do not have a direct flow of money.

For example, with the rehabilitation of the Botanical Garden in Dar es Salaam the monetary cost would refer to the capital cost of the rehabilitation that would be needed to restore old building and build new buildings. There would also be money required to buy and plant new plants. The monetary benefit would refer to the income that could be earned from entrance tickets, events and exhibitions that could be held at the rehabilitated Botanical Garden.

It is difficult to provide an example of a non-monetary cost in the case of the rehabilitation of the Botanical Garden as the rehabilitation would lead to many non-monetary benefits such as a reduction in temperature in the CBD through the provision of a green space, the benefit of providing a green space to office worker to relax in during their lunch hour, the benefit of providing nesting for birds, etc. These are benefits that are difficult to quantify or put a money value on, but these benefits are an important outcome of the rehabilitation of the Botanical Garden.

Task 3.5: The risk assessment answers the question “How” by identifying the main risks and critical success factors of the project. It should highlight the impact if the risk should materialise and the mitigation measures that could be taken.

Task 3.6: The marketing and communication strategy answers the questions “How, When”. It details the key messages that should be communicated with all stakeholders in the project and could range from general awareness amongst communities to lobbying of government and the private sector.

Task 3.7: The implementation plan answers the questions “Who, How and When”. It includes a clear timeline with key steps, responsible parties and measurable performance indicators.



FIGURE 4 THE DAR ES SALAAM BOTANICAL GARDEN, A ‘GREEN LUNG’ IN THE CITY CENTRE OF DAR ES SALAAM CITY, TANZANIA. DAR ES SALAAM FALLS WITHIN THE EAST AFRICAN COASTAL FOREST, A GLOBALLY IMPORTANT BIODIVERSITY HOTSPOT. (PHOTO: ERNITA VAN WYK)

3. Project Scope: Tools to Answer the What, Why & Where

“What” is the project description and specifies what is being invested in.

“Why” defines the reasons for the investment.

“Where” defines the location of the investment.

3.1 Introduction

The project scope answer the questions “What, Why & Where” and incorporates the work conducted during Step 1. It is the most important element of an investment case as it takes into account all of the project concepts and ideas and identifies the most needed and most viable concept. The project scope includes a project description, project rationale and value proposition.

3.2 Tools to define the Project Scope

Clarify ecosystem services

Step 1 of the Investment Case is based on the practice-oriented framework, formulated by Rode J et al (2016), for identifying economic instruments to enhance biodiversity and human livelihoods. The framework provides the tools to identify and prioritise the range of ecosystem services so that a specific project can be defined.

In the framework, the first task is to clarify which issues or questions are of primary concern to stakeholders, and to understand how they are linked to ecosystem services. Tools that could be utilised include:

- A scan of the ecosystem services in the urban environment. An example of information that could be utilised for such a scanning process is the Thematic Atlas (Karutz et al., 2019) (Available at: <https://interactbio.iclei.org/resourcescategories/project-publications/>) that was compiled by ICLEI Africa for Dar es Salaam to show how nature’s benefits protect cities, sustain them and make them liveable.
- Nature’s contribution to people (NCP) that is defined as all the positive contributions, losses or detriments, that people obtain from nature to capture both beneficial and harmful effects of nature on people’s quality of life (Pascual et al 2017, Valuing nature’s contribution to people: the IPBES approach). (Available at <https://www.sciencedirect.com/science/article/pii/S1877343517300040>)
- A facilitated consultation process with various stakeholders in the urban environment to understand their daily interactions with nature and ecosystem services and their relationship with ecosystem services.

Box 3.1: Points to consider in a facilitated consultation process

For each participatory process, organizers should specify: Who participates? On which terms? For what purpose? Stakeholders need to have a clear idea of what they can expect from the process.

A useful tool to utilise during this process is Stakeholder Mapping, which is a visual tool to clarify and categorise the various stakeholders by drawing a visual representation of what the stakeholder groups are, which interests they represent, the amount of power they possess, whether they represent inhibiting or supporting factors to realizing the project's objectives and methods with which they should be communicated and consulted with.

Organizers should analyze (politically and in economic terms), interactions and power dynamics within the local context, as well as between a locality and its wider structural setting. Examining the distribution of ecosystem services provides important insights.

If power dynamics are neglected, the process may be used by those with the most power to capture additional benefits.

Participants should include everyone directly affected by the decision, as well as those relevant to implementation. Different actors will have different concerns. Holding focus group discussions, bilateral meetings and participatory workshops, and having an objective facilitator, can assist the process.

The success of a participatory process largely depends on the trust stakeholders place in it. For this reason, the reliability and transparency of the facilitator are key.

Source: Berghöfer U and Berghöfer A. 2006.

Clarify the relationships between people and ecosystems

The second task seeks to understand, map, and describe the relationships between people and ecosystem services. It aims to assess how stakeholders relate to, or interact with, the relevant ecosystem services, according to their role as either:

- an ecosystem provider (conserves biodiversity, manages ecosystems or otherwise influences access to ecosystem provision and/or the distribution of benefits from ecosystems);
- an ecosystem beneficiary (uses or depends on ecosystem services or indirect interest in their provision); or
- an ecosystem degrader (damages, depletes or destroys ecosystems or otherwise has a negative impact on their provision).

Tools that could be utilised, include the mapping of ecosystem services and stakeholders based on whether they are an ecosystem provider, beneficiary or degrader. This information can be obtained during the consultation process with various stakeholders.

Identify imbalances

The third task uncovers gaps in ecosystem service provision, and imbalances in costs and benefits of ecosystem service provision. Imbalances occur when one actor (or a group) pays for the provision of ecosystem services, and others benefit from them without making any contribution; or when a stakeholder degrades the ecosystem and others suffer as a result. For example, a factory may pollute a river which would lead to farmers suffering as a result because they utilise the river for irrigation of their crops.

Identify opportunities to safeguard ecosystems

The fourth task identifies the opportunities to influence, incentivise and motivate stakeholders to safeguard ecosystems. This step also points to potential funders for the project. It distinguishes four broad types of opportunities, three of which directly link a specific stakeholder role (ecosystem service (ES) provider, ES beneficiary, ES degrader) to general economic principles, namely the principles of 'Steward Earns', 'Beneficiary Pays', and 'Polluter Pays'. A fourth type concerns 'Innovation', i.e., business opportunities based on ecosystem services, through which local communities may benefit from conservation. These principles are defined in section 4.2 below.

Assess the opportunities

The fifth task involves critical reflection on the appropriateness of the opportunities, also considering factors outside the domain of economics, such as the reduction in the need for health care and clinics as the health of the population improve due to an improvement in the air quality. It assesses whether the opportunity will generate net livelihood benefits for those concerned, in both qualitative and quantitative terms; and whether there could be any (unintended and undesired) consequences for other stakeholders.

The framework provides the tool to identifying ecosystem service opportunities and suitable economic instruments. An example of the utilisation of the tools in the case of ecosystem service opportunities in Dar es Salaam is shown in Table 3.1.

Define suitable economic instruments

The sixth task is the identification of suitable economic instruments, which are discussed in more detail in Section 8.



FIGURE 5 PARQUE DAS ÁGUAS, LOCATED IN CAMPINAS - SP/BRAZIL WAS OPENED IN 2007 AND SINCE THEN OFFERS LEISURE SPACE FOR THE COMMUNITY AND ALSO OFFERS CULTURAL ACTIVITIES RELATED TO THE WATER CYCLE, SUCH AS PERMANENT EXHIBITIONS AND WORKSHOPS; IN ADDITION THE PARK

Table 3.1: Identification of ecosystem service (ES) opportunities in Dar es Salaam

Clarifying relevant issues and the role of ES	The Thematic Atlas of Nature’s Benefits to Dar es Salaam highlights the need for greening the city and for keeping urban and peri-urban ecosystems intact. Particular opportunities highlighted are the provision of water, roadside greening for cleaner air, greenspace development for healthy communities, urban vegetation to cool the city and creating green spaces to reduce flood risks.			
Understanding how stakeholders relate to ES	Stakeholders in Dar es Salaam can simultaneously be ES providers, beneficiaries and degraders. ES providers in Dar es Salaam are public sector authorities tasked with the provision of clean water, urban parks and flood risk mitigation. They also benefit from the ES provision but also degrade the ES through lack of maintenance of the ES provided. Dar es Salaam residents provide ES through urban agriculture and fishing and are beneficiaries of these ES. They also degrade the ES through unsustainable practices and pollution.			
Recognizing gaps and imbalances	Unrecovered costs of ES provision or potential costs for more ES provision include the additional cost to maintain ES	Unpaid benefits or interest in more ES provision include tourism, recreation, education, conservation, rehabilitation of indigenous species, reduction in air pollution, reduction in temperature, potential medicinal benefits, restoration of soil fertility, habitat creation, inspiration for arts & culture, improved mental health and increased land values.	Uncompensated ES degradation include polluters that are not held liable	
Identifying ES opportunities	Steward earns opportunities include incentives to the private sector to create and maintain green spaces	Beneficiary pays opportunities include foreign and domestic tourism	Polluter pays opportunities include fines for polluters	Innovation opportunities include nature-based tourism and education

<p>Checking the appropriateness to pursue the ES opportunity</p>	<p>Incentives to the private sector will take a significant amount of time to define and legislate</p>	<p>Foreign tourism will be more viable as domestic tourism numbers and expenditure are low</p>	<p>Enforcement of fines would require additional resources – policing, prosecution, etc</p>	<p>Tourism is viable but will commence from a low base, while education will require funding, but will have long-term benefits</p>
<p>Pre-selecting suitable economic instruments</p>	<p>Greenspaces are owned and managed by the public sector, who have limited budget and human resources. The private sector is willing to support ES opportunities but wish to ensure that the funding is effectively spent. The creation of a private sector entity to facilitate and realise the ES opportunities in partnership with the public sector is required. The relevant economic instruments could then include private sector funding through cash donations, donations in kind, contribution of skills and expertise, etc. The public sector could contribute concessions on tax, water and electricity payments, etc</p>			

3.3 Tools to Articulate the Importance of Biodiversity

To support the project rationale, it is important to clearly articulate the importance of biodiversity and ecosystem services. A tool, developed and published in 2011 by the South African National Biodiversity Institute (SANBI⁶), provides guidance. They have produced a rationale and set of messages that reposition biodiversity and ecosystem services as drivers of the green economy, and as a platform on which solutions to service delivery and job creation can be built.

Although the eight key messages formulated are specific to South Africa, however, they can be adapted to any country. The eight key messages are:

Message 1: National Asset

Biodiversity is natural capital with immense economic significance for South Africa.

Ecosystem services such as grazing and pollination underpin our agricultural industry. Estuaries provide nurseries for many of our fisheries, while wetlands naturally purify water – and our tourism industry relies on our natural infrastructure.

The value of ecosystem services so far measured in South Africa is conservatively estimated at R73 billion per annum. Moreover, the Green Economy Summit predicted that the green economy can generate 400 000 new jobs in this country within five years.

Investing in natural capital, by giving a superior return on the investment, is investing in our country.

Message 2: Children's Legacy

Every decision Government makes, affects the future of biodiversity - a rich or impoverished natural world that we leave for our children and children's children.

Nature has given us a world full of wealth - in the form of trees and water, fish and clean air, insects that pollinate and worms that aerate soil, plants that heal and connectedness with our traditions.

But the more we take from this store of wealth, the less there is to nourish the next generation. By investing in nature we take care of our families.

⁶ SANBI and DEA, September 2011, Making the Case for Biodiversity Phase 1 Final Draft Project Summary Report

Message 3: Practical Solutions

Here are three things that Government can do to protect and enhance our natural infrastructure. Ensure biodiversity maps inform decisions about where development is located. Expand and manage our network of national parks and nature reserves. Seriously consider the Return On Investment, employment and climate change adaptation benefits of naturally restoring degraded ecosystems

Message 4: Wealth of the Rural Economy

Biodiversity is the natural capital of the rural poor. Without financial capital, the natural world still provides food and water, shelter, medicine and cultural bonding.

Trading biodiversity for short-term gains steals from the most marginalised in our society, their heritage and their future. Instead, we need to unleash the potential of biodiversity to develop rural economies.

Message 5: Climate Change

Climate change will have negative effects for our food and water supplies, our traditional medicines and eco-tourism.

But good biodiversity management can slow down climate change and its impacts. Grasslands and forests store carbon for us, keeping it out of the atmosphere. Healthy rivers and wetlands reduce the repercussions of floods and droughts.

Message 6: Global Leadership

South Africa is a world leader in biodiversity. We are the third most biodiverse country in the world, with many global best practices that include: Working for Water and other EPWP Programs, Maps of Critical Biodiversity Areas with Linking Corridors that guide spatial planning Biodiversity and Wine Initiative that has seen wine- farmers of South Africa with a total of 100 000 hectares under vines, conserving an additional 120 000 hectares.

As the world faces a global biodiversity crisis, South Africa can spearhead innovative solutions.

Message 7: Health

Healthy, thriving biodiversity is vital for a healthy population. For example, healthy rivers and wetlands will prevent the spread of water-borne diseases such as bilharzia, cholera and malaria. Our rich variety of flora and fauna provides natural medicines used by over 80% of our population.

Biodiversity is the fabric of life and it is the duty of Government to ensure this natural infrastructure continues to deliver, for the benefit of all.

Message 8: Humanity

As humans, we are part of the web of life. We need the sense of wonder and spiritual fulfilment that the natural world gives us.

Our cultural diversity together with the diversity of Nature makes us unique and resilient. As a society, we must value and reclaim our heritage and what the Earth has to offer us. Nature's ubuntu is all around us - and is part of us.

These key messages can be supported with case studies highlighting the importance of biodiversity. (See the example in Box 3.2 below).

Box 3.2: Case Study: Pest Control for Sugarcane Farmers in South Africa⁷

Agricultural pests can be controlled by combining wetland restoration and conservation with good farming practices.

South African sugarcane farmers' most serious pest is a small grey moth species called *Eldana saccharina*, that lives naturally in wetlands. With the cultivation of sugarcane fields right up against the edges of wetlands, the moth started to invade the sugarcane for food and laying its eggs. Sugarcane does not have the same defences as the moths' traditional food source. Wasps, the natural enemy of the moth were also not as prevalent in the sugarcane fields as in the wetlands. In 2018 the cost of crop losses due to the moth were estimated to be between R60 million and R150 million per year (date).

The sugarcane farmers found that by restoring the wetlands, they could push the moth back to its natural habitat. The rehabilitated habitat also revived the natural predators of the moth.

⁷ <https://www.sanbi.org/biodiversity/science-into-policy-action/mainstreaming-biodiversity/cape-programme/ten-compelling-case-studies-making-the-case-for-biodiversity/>

The sugarcane farmers also found that by planting indigenous molasses grass that repels and moths and attracts their natural enemies, and by following good farming practices, they could drive the moth out of the sugarcane fields. It was found that the planting of molasses grass on roads and contour banks between sugarcane fields can reduce the damage caused by the moth by up to 50%.

Good farming practices included not over fertilising the sugarcane as this attracted the moth and matching the most appropriate sugarcane variety to soil to keep the soil healthy. The healthy soil is less attractive to the moth than over farmed soil.

3.4 Tools to Articulate the Project Rationale

A valuable and very comprehensive tool to articulate the rationale for a specific project is “Indicators for Managing Ecosystem Services – Options & Examples” published by GIZ and available at www.aboutvalues.net. Examples of indicators and methods to assess value are provided per ecosystem service. Various case studies are also described.

The articulation of the project rationale could also be linked to the value proposition of the project for stakeholders. Typical value propositions include:

- For public bodies, typical priorities are de-risking (water retention, urban heat) i.e. involving mainly regulating ecosystems services;
- For private entities, typical priorities are real estate value capture, return on investment and stewardship; and
- For citizens/communities priorities in developed countries are typically symbolic and educational. Priorities in developing countries typically include food security and fresh water (i.e. mainly provisioning services) and economic opportunities.

The project rationale can thus be formulated in relation to the value proposition for specific stakeholders (See Box 3.3 below). For example, the rationale of a project to rehabilitate a river system can be articulated to the public sector by demonstrating the resulting flood prevention gains. Tools that can be used include impact evaluation and cost-effectiveness analysis.

- Impact evaluation defines the effect of a project on an outcome for stakeholders. This can be measured by comparing the outcome for stakeholders with or without the project or the outcome for stakeholders before and after the project.
- Cost-effectiveness analysis analyse whether objectives have been achieved and at what cost. This can be achieved by dividing the cost of the project by a quantified measure of the physical effect of the project, such as kilometres of river restored, or tonnes of emissions reduced.

Box 3.3: Articulating the Value Proposition to Government - Kampala, Uganda

At the outskirts of Kampala, Uganda's capital city, the Nakivubo Swamps provide an important ecosystem service. The swamps treat and filter the biological waste water from the city. Plans to drain the wetland in order to gain agricultural land were considered, but then abandoned, when an assessment of this service showed that running a sewage treatment facility, with the same capacity as the swamp, would cost the city around 2 million US\$ annually.

An assessment of the value of the wetland means that:

- City planners and the sanitation department may benefit from detailed information.
- City council can make informed decisions based on various cost estimates.
- Informal land conversion of the wetland for agriculture can be judged in the light of sewage treatment capacity lost.
- Direct investment to maintain the wetland can be identified as a cost-effective measure to ensure future purification benefits.

(TEEB case by Almack 2010).

3.5 Tools to Articulate the Project Location

The project location is an integral part of the project description and answers the question "Where". The project location would be dependent on the location of the ecosystem service and will emerge from the process to identify the most needed and viable project.

The location of the project within a specific area could also be important in the articulation and motivation of the project. The case study below (Box 3.4) indicates the importance of the location of buildings within a specific area to maintain tree cover, while still achieving the goal to establish an attractive tourism resort.

Box 3.4: Club Mahindra Holidays – Madikeri Resort, India

Madikeri resort is located in the small valley about 5 km from the Madikeri town of Kodagu district in Karnataka state in the Western Ghats in India. The Kodagu District is well known as Coorg. The resort covers an area of 32.5 acres in which 220 luxurious apartments, facility areas and internal roads are constructed on 8.5 acres (26%). The remaining 24 acres (74%) are under the dense green cover of tree and coffee plantation. None of the apartments in the resort are fitted with air conditioners due to dense tree cover. Occupancy level of Madikeri resort is about 80% throughout the year due to increased tourist activity in the Coorg area.

The Madikeri resort was planned on two important principles: to minimise cutting of native trees and coffee plantation; and meeting tourist expectations of a green and healthy environment at resorts. The resort was constructed in four phases to minimise construction impacts on the native vegetation, and serve the growing demand of the tourism sector in the Coorg area. Resort construction was started in 2005 and the total target of 220 rooms was achieved in 2010.

Only 26% of the plot area was used for construction of the resort while tree cover was maintained on the remaining 74% of the plot area. During the design and construction phase of the resort, apartments were proposed on the sites which have low biodiversity value and at some of the locations, apartments were sited and angled to clear as little land as possible, keeping all old growth trees in place, and to gain advantage from prevailing breeze and natural shade.

Adaptation of nature-based design and minimising tree-cutting helped in reducing ambient temperature in the resort area in comparison with areas nearby. The six-year monthly average temperature at the resort, when compared with the thirty-year monthly average of the Madikeri monitoring point data of the India Meteorology Department, shows that average daily temperature in summer is relatively lower at the resort.

Adopting a nature-based design resulted in avoiding an installation cost of Rs. 6.13 crore (US\$820 000) for space cooling (air-conditioning); operational cost of Rs. 17.40 crore (US\$2.3 million), and maintenance cost Rs. 2 crore (US\$268 000), amounting to INR 25.53 crore (US\$3.4 million) based on 2017 estimates.

Avoided cost on electricity (for air conditioners) in 2018 for 220 rooms is around INR 1.85 crore (US\$248 000), considering an average yearly use of 7308 units/room and an electricity cost of INR 11.56(US\$1.5 million)/ unit for commercial establishments.

The cost saving analysis from 2005 till 2018 with respect to phase-wise addition of rooms is around INR 13.99 crore (US\$1.9 million) (considering electricity consumption 7308 units/room and cost of electricity from INR 6 (US\$804 000) to INR 11.56 (US\$1.5 million) per unit from 2005 to 2018).

Protection and maintenance of floral diversity in the resort area have reduced costs that would have been incurred on space cooling. Continued care and even extension of the 20,735 plantations done from 2005 to 2018 will sustain these benefits in coming years, and even create a positive impact on overall biodiversity.

4. Organisational Framework: Tools to Answer the Who and How

“Who” defines the various stakeholders in the investment along with their interest and responsibilities.

“How” defines the institutional structure required to realise the investment.

4.1 Introduction

The organisational plan/framework answers the question “Who, How”. It incorporates the work conducted during Task 2.2. and Task 2.3. It details the stakeholders, the project funder/champion, the institutional structure required and the regulatory environment.

4.2 Tools to Articulate the Who and How

During the first step of the investment case approach, the various stakeholders should be identified and classified according to whether they are ecosystem providers, beneficiaries or degraders.

The first step also includes identification of opportunities to influence, incentivise and motivate stakeholders to safeguard ecosystems. It distinguishes four broad types of opportunities, three of which directly link a specific stakeholder role (ES provider, ES beneficiary, ES degrader) to general economic principles, namely the principles of ‘Steward Earns’, ‘Beneficiary Pays’, and ‘Polluter Pays’. A fourth type concerns ‘Innovation’, i.e., business opportunities based on ecosystem services, through which local communities may benefit from conservation.

- The **Steward Earns principle** relate to positive incentives and rewards to motivate enhanced ecosystem services provision and are used in payment for ecosystem services (provider side). Examples include green subsidies, conservation easements, payment for ecosystem services (PES) and debt-for-nature swaps.

- The **Beneficiary Pays principle** relates to contributions from ecosystem beneficiaries to finance ecosystem provision and are used in payment for ecosystem services (user side). Examples include charges & fees and corporate sponsorship.
- The **Polluter Pays principle** relates to negative incentives and compensations for harming ecosystem services and are used in legal liabilities & fines/(Pigouvian). Examples includes taxes and offsetting schemes.
- The **Innovation principle** relates to unlocking new potentials to benefit from conservation and can be reached with eco-labelling, ecological products & eco-tourism, microcredit and green investment.

A tool that could be used to determine the most appropriate funding instrument to utilise, and therefore the most appropriate institutional structure, is the Classification of Common Policy Instruments along Economic Principles Rode J et al (2016). The classification indicates:

- The economic instrument, for example user fees, carbon payment, taxes, eco-labelling, etc;
- The economic principle, namely Steward Earns, Beneficiary Pays, Polluter Pays or Innovation; and
- An explanation of how the economic instrument works.

This tool can be utilised in conjunction with the tool developed by the OECD (see Table 4.1) to identify capacity of the various stakeholders to effectively implement the economic instruments. It is critical that the capacity required to implement the chosen economic instrument should exist.

Table 4.1: Capacity Needs for Economic Instruments

Finance Mechanism	Individual capacity	Organisational capacity	Enabling conditions
Environmental Fiscal Reform (EFR)	Skilled advocates to secure political acceptance and public support for EFR through e.g. awareness campaigns	Processes for dialogue and consultation, information dissemination and advocacy with key stakeholders (including via civil society groups)	Established tax system capable of levying, collecting and redistributing revenues
Payments for Ecosystem Services (PES)	Experts (external or internal) can identify metrics and carry out assessments to inform targeting of payments for public pay for ecosystem services programmes	Systems in place to ensure that payments are delivered efficiently and to the appropriate recipient avoiding elite capture etc.	Inclusion of ecosystem service provisions in sector strategies, Poverty Reduction Strategy Papers, etc. and coherency between policies
Biodiversity offsets	Experts to select and apply metrics and indicators to compare expected losses and gains	Market support services (e.g. assurance, public registries, brokerage etc.)	Laws requiring developers to compensate for their environmental damages
Markets for green products	Trained experts to carry out certification and accreditation	Distribution channels to deliver certified products in competitive manner (particularly for local communities marginalised from premium markets)	Green procurement policies (including public procurement policies)
Biodiversity in climate change funding	Technical expertise and knowledge related to green infrastructure and ecosystem based	Systems to manage and distribute funds in an efficient and equitable manner	National climate change mitigation and adaptation strategies explicitly recognising REDD+ and ecosystem

Biodiversity in international development finance	Development support staff have a thorough understanding of the local level linkages between development, biodiversity loss and poverty	Guidelines for the application of environmental and social safeguards (e.g. SEA and environmental screening tools)	Development support providers have commitment to environment strategy linked to poverty reduction and the Sustainable Development Goals
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Source: OECD, Scaling up finance mechanisms for biodiversity (2013).

A risk assessment is a tool that can assist in articulating the “How”. A risk assessment identifies the main risks and critical success factors of the project, and should include:

- The main risks and critical success factors of the project;
- The impact on the project should the risk materialise; and
- The specific risk mitigation measures that could be taken.



FIGURE 6 TREE-LINED STREETS IN THE CITY OF KOCHI, INDIA. (PHOTO: ALEX C. JOSE)

5. Cost-Benefit of the Investment: Tools to Answer the How Much

“Who” defines the various stakeholders in the investment along with their interest and responsibilities.

5.1 Introduction

The cost benefit analysis incorporates the work conducted during the second step of the investment case approach and can include the following:

- A market assessment to indicate whether there will be demand for the nature-based solution i.e. if the solution is provided, will people use it, how much will they use it, and will it be to their benefit.
- A financial assessment to indicate whether the nature-based solution would be affordable and/or provide a return on investment. The cost of the nature-based solution (Task 2.1) needs to be clearly defined and linked to the identified funding mechanism (Task 2.3).
- An economic assessment to indicate whether the nature-based solution would provide value for money. This analysis is more than a financial analysis as it includes monetary and non-monetary costs and benefits.

Box 5.1: Cost Benefit Analysis for Nature-based Solutions in Dar es Salaam

The cost benefit analysis conducted for the business case for investment in urban nature, namely the rehabilitation of the Botanical Garden in Dar es Salaam includes:

- A market assessment to demonstrate the number of visitors that could potentially utilise a rehabilitated Botanical Garden;
- A financial assessment to demonstrate the financial viability of the rehabilitated Botanical Garden; and
- A socio-economic assessment to demonstrate the monetary and non-monetary cost and benefits of the project such as the restoration of Dar es Salaam’s unique biodiversity, the creation of a tourism attraction, the increase in green and recreational space for residents of Dar es Salaam, the reduction of the average temperature in the inner city and the improvement in the air quality in the inner city.

5.2 Tools to Articulate the Cost Benefit

Tools used to determine the monetary value of an ecosystem service have been listed by TEEB (2011) (see table 5.1 below). Specific application and lessons on TEEB for cities is provided in the TEEB publication “TEEB for Local & Regional Policy Makers” (2010). Additional tools and case studies can be obtained from www.aboutvalues.net.

Table 5.1: Tools to determine the monetary value of an Ecosystem Service

Methods	Summary	Statistical Analysis	Which Services Valued?
Direct market prices	Observe market prices	Simple	Provisioning services
Market alternative - Replacement costs	Finding a man-made solution as an alternative to the ecosystem service	Simple	Pollination, water purification, carbon sequestration
Market alternative - Damage cost avoided	How much spending was avoided because of the ecosystem service provided	Simple	Damage mitigation, carbon sequestration
Market alternative - Production function	How much is the value-added by the ecosystem service based on its input to production processes	Complex	Water purification, freshwater availability, provisioning services
Surrogate markets - Hedonic Price Methods	The extra amount paid for higher environmental quality	Very complex	Use values only, recreation and leisure, air quality
Surrogate markets - Travel Cost Method	Cost of visiting a site: travel costs (fares, car use, etc) and also value of leisure time expended	Complex	Use values only, recreation and leisure

Stated preference - Contingent valuation method	How much is the survey respondent willing to pay to have more of a particular ecosystem service?	Complex	All services
Stated preference - Choice experiments	Given a menu of options with differing levels of ecosystem services and differing costs, which is preferred	Very Complex	All services
Participatory environmental valuation	Asking members of a community to determine the importance of a non-marketed ecosystem service relative to goods or services that are marketed	Simple	All services
Benefits transfer (mean value, adjusted mean value, benefit function)	Borrowing or transferring a value from an existing study to provide a ballpark estimate for current decision	Can be simple, can be complex	Whatever services were valued in the original study

Source: TEEB 2011

It is important to determine the value proposition of the ecosystem service to potential funders to demonstrate why they should be funding the ecosystem service. Typical value propositions include:

- For public bodies priorities are de-risking (water retention, urban heat) i.e. mainly regulating services;
- For private entities priorities are real estate value capture, return on investment and stewardship; and
- Citizens/communities priorities in developed countries are symbolic and educational. Priorities in least developed countries include food security and fresh water (i.e. mainly provisioning services).

It is important to determine the value proposition of the ecosystem service to potential funders to demonstrate why they should be funding the ecosystem service. Typical value propositions include:

- Which are the least-cost policy options? (What instruments are most likely to meet the intended goals? Identify least-cost policy options and mechanisms and areas for intervention to determine policy priorities and sequencing);
- For private entities priorities are real estate value capture, return on investment and stewardship; and
- What safeguards need to be put in place? (What are the potential environmental trade-offs? Put in place environmental safeguards to address these as needed. What are the likely distributional implications of the instrument? Consider social safeguards to address these as needed). If funding mechanisms being considered include grants from the World Bank (eg the Global Environmental Facility) or Climate Adaptation Fund of Green Climate Fund, then it is important to take into account the safeguards that must be met by these funds.

Box 5.2: Finance Solution Case Study: Cape Town Green Bond

In 2017, the City of Cape Town issued a ZAR 1 billion (EUR 59 million) green bond to attract private sector investment. It was the first such initiative in Africa to be accredited by the Climate Bonds Initiative (CBI) and was awarded a GB 1 rating by international ratings agency Moody's. It won the 'Green Bond of the Year' at the 2018 Environmental Finance Green Bond Awards.

A green bond is effectively a loan: investors buy the bonds and thereby provide funding, but funds are earmarked for climate-related projects and upgrades, in this case a series of water and low carbon transport projects. The loan is repaid by means of municipal revenues such as water tariffs or transport charges, or other sources, including taxes. Green bonds require additional rigour to qualify as such, and are thus often perceived as trustworthy investments. As an example, demand for the City of Cape Town's green bond outstripped supply five times as a result of strong political support and investor confidence in the City's governance. This occurred despite financial market uncertainty in South Africa at the time.

- The City is using the proceeds to fund a mix of adaptation and mitigation initiatives aligned with its Climate Change Strategy, with a particular focus on water infrastructure in response to the severe drought of 2017. With US\$ 696 billion international green bonds issued to date, the popularity of these issuances in Africa is expected to increase significantly.

The OECD report on *Biodiversity: Finance and the Economic and Business Case for Action*⁸ provides an overarching economic and business case for biodiversity and can be utilised to support the investment case for a specific investment.

Statistics on the biodiversity-relevant economic instruments and the finance they mobilise can also be used to support the argument for financing of the investment. For example, in Denmark, 100% of the revenue from the pesticides tax is earmarked for environmental purposes and to compensate farmers. This tax revenue amounted to USD 78.1 million in 2016⁹.

A resource that could assist in understanding the finance mechanisms for biodiversity include, Majoe N, Coetzee I, Robinson K, (2018), Introduction to Finance Mechanisms and developing bankable project proposals, Local Action for Biodiversity. Available online: <https://cbc.iclei.org/wp-content/uploads/2018/11/LAB-Introduction-to-Biodiversity-Finance-Mechanisms.pdf>. The publication provides a discussion on the principles for investing in ecological infrastructure, explains how the funding landscape is structured, how municipalities can navigate it and provides information on applying for funding, including details on available biodiversity funding and general guidance on how to apply for funding.

Tools specific to Government on which finance tool to use include the Climate Finance Decision-Making Tree contained in the Finance Toolkit: An introduction published by ICLEI Africa is available for download at:

<http://e-lib.iclei.org/wp-content/uploads/2019/12/Introduction%20finance%20toolkit.pdf>. The tool provides a range of questions to determine the best financing tools to use.

⁸ OECD (2019), *Biodiversity: Finance and the Economic and Business Case for Action*, report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019.

⁹ OECD, 2018, *Tracking Economic Instruments and Finance Biodiversity*

6. Project Timeframe: Tools to Answer the When

'When' defines the timeframe of the investment.

6.1 Introduction

The project timeframe is a result of the various actions that is required to implement the project. The project timeframe is usually best addressed in the implementation plan that answers the questions "Who, How and When". It includes a clear timeline with key steps, responsible parties and measurable performance indicators.

6.2 Tools to Articulate the When

The best tool to articulate the When is the compilation of an implementation plan. The implementation plan should clearly define the following:

- Key steps to reach key milestones in the project implementation;
- The key tasks to be undertaken within each key step;
- Identification of the parties responsible for each task;
- Identification of the measurable performance indicators that need to be achieved; and
- A clear and realistic assessment of the time that each task will take, taking into account that some tasks may occur concurrently, while other tasks are dependent on the completion of certain tasks.



FIGURE 7 NORTE-SUL AVENUE, LOCATED IN CAMPINAS - SP/BRAZIL IS A CENTRAL AXIS FOR CIRCULATION IN THE CITY AND ONE OF THE MOST FAMOUS AVENUES OF THE REGION, CONNECTING THE NORTH AND SOUTH PORTIONS OF THE CITY. PHOTO CREDIT: CARLOS BASSAN

7. Concluding Insights

Discussed below are the key lessons learnt, and insights gained during the formulation of an approach to compile an investment case that could be utilised by others to attract multiple sources of funding for nature-based solutions in an urban environment.

1. Consultation and collaboration with all stakeholders are key

The first key step in the approach to compile an investment case is the prioritisation of the various concepts and ideas at various stages of development to identify the most needed and most viable ideas and options. This cannot be achieved without consultation and collaboration with all stakeholders to understand their needs and how they interact and benefit from ecosystem services.

It is critically important to identify the stakeholders that will implement the project and to collaborate with them from project initiation to ensure their buy-in and ownership of the project implementation.

2. Follow a structured approach to decision making as there are various competing needs

It is inevitable that various stakeholders with various needs will be identified during the first steps of the approach to compile the investment case. There are usually various needs in an urban environment that could be addressed through ecosystem services. A structured approach ensures that each need is systematically analysed and prioritised to identify the most needed and most viable.

It might be necessary to make very tough decisions between many projects all of which are greatly needed. A structured approach will assist with this difficult decision making.

3. Provide context

While compiling an investment case it is easy to get lost in statistics and numbers to demonstrate the importance of the project. However, it is only by providing context to these numbers that the statistics and numbers are expressed at a human level and at the level of benefits. This expression at the human level can be far more convincing than numerous statistics and numbers.

For example, tree planting along a busy road would reduce the temperature by 5 degrees and make it more convenient for women, who carry goods between various points of sale along the road, to utilise the road throughout the day, rather than just during the cooler morning and late afternoon period.

This will not only improve the conditions under which they work, but also provides an opportunity to increase their income by increasing the daily time duration during which the road could be utilised.

The reduction in temperature by tree planting is placed into context by expressing it at the level of human benefit.

4. A site visit is critical

It may seem like an obvious point, but a detailed site visit is critical in identifying stakeholders and understanding their needs. Much desk top preparation can be done prior to a site visit, but it is only during a site visit that the actual stakeholders and their interaction with the environment can be observed.

This observation entails spending time with various stakeholders to not only ask them about their needs, but also to observe their interaction with nature. This observation may need to be conducted on different days and even at different times of the day.

This prolonged interaction with stakeholders will also build the relationships needed for proper consultation and collaboration to ensure the implementation of the project.

5. Demonstrating the importance of biodiversity

The importance of biodiversity needs to be made explicit in relatable terms before the importance of a particular project is demonstrated. This is especially important in developing contexts where cities must address competing pressures such as housing (and the sprawl of informal settlements), other grey infrastructure development such as roads, water and sanitation provision, and economic growth. What this means is compiling the evidence of the importance of urban nature and urban biodiversity through examples that the stakeholders can identify with in their everyday lives. These examples can be obtained during the site visit and can be linked to other development needs of the city.

By firstly demonstrating the importance of urban nature and biodiversity, the demonstration of the importance of the specific project will become easier. It is like convincing somebody of the importance of a healthy lifestyle before convincing them to start exercising.



FIGURE 8 DAR ES SALAAM CITY. THE COASTAL AND MARINE ECONOMY IS SIGNIFICANT FOR DAR ES SALAAM CITY (PHOTO: ICLEI)

Annexure A: Abbreviations and Acronyms

DEA	Department of Environmental Affairs
EPWP	Expanded Public Works Programme
ES	Ecosystem Service
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
OECD	Organisation for Economic Co-operation and Development
SANBI	South African National Biodiversity Institute
TEEB	The Economics of Ecosystems and Biodiversity

Annexure B: References

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Annexure C: Resources

Climate Finance Bibliography

This link provides an inventory of studies, reports, guidance and toolkits including links to various knowledge centres and learning platforms.

<http://e-lib.iclei.org/wp-content/uploads/2019/12/Climate%20finance%20bibliography.pdf>

Financial Institutions

This link provides a catalogue of opportunities that features financial institutions and other actors that have programs and initiatives which support local and governments in their project preparation and implementation.

<http://e-lib.iclei.org/wp-content/uploads/2019/12/Climate%20finance%20opportunities.pdf>

Climate Finance Glossary

This link is to a collection of essential terms and definitions used in international climate finance, financing mechanisms and finance in general.

<http://e-lib.iclei.org/wp-content/uploads/2019/12/Climate%20finance%20glossary.pdf>