



CEO Approval (CEO) entry ? Medium Sized Project ? GEF - 7

Using systemic approaches and simulation to scale nature-based infrastructure for climate adaptation

Part I: Project Information

GEF ID

10632

Project Type

MSP

Type of Trust Fund

SCCF

CBIT/NGI

☐ CBIT

☐ NGI

Project Title

Using systemic approaches and simulation to scale nature-based infrastructure for climate adaptation

Countries

Global

Agency(ies)

UNIDO

Other Executing Partner(s)

International Institute for Sustainable Development (IISD)

Executing Partner Type

CSO

GEF Focal Area

Climate Change

Taxonomy

Focal Areas, Climate Change, Climate Change Adaptation, Climate resilience, Livelihoods, Ecosystem-based Adaptation, Adaptation Tech Transfer, Private sector, Innovation, Mainstreaming adaptation, Influencing models, Demonstrate innovative approach, Strengthen institutional capacity and decision-making, Stakeholders, Private Sector, Financial intermediaries and market facilitators, Capital providers, Individuals/Entrepreneurs, Communications, Public Campaigns, Education, Awareness Raising, Local Communities, Type of Engagement, Consultation, Participation, Information Dissemination, Beneficiaries, Civil Society, Academia, Community Based Organization, Non-Governmental Organization, Capacity, Knowledge and Research, Knowledge Exchange, Capacity Development, Enabling Activities, Learning, Adaptive management

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Submission Date

2/11/2021

Expected Implementation Start

3/31/2021

Expected Completion Date

3/31/2026

Duration

60In Months

Agency Fee(\$)

190,000.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-2		SCCF-A	1,250,000.00	2,389,053.75
CCA-3		SCCF-A	750,000.00	1,433,432.25
Total Project Cost(\$)				2,000,000.00
				3,822,486.00

B. Project description summary

Project Objective

To enhance adaptation to climate change by establishing the business case, building capacities, and enabling increased investment in Nature Based Infrastructure.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co- Financing(\$)
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 1: Valuation of nature-based infrastructure (NBI)	Technical Assistance	<p>1.1 Improving the predictability and knowledge on the economic efficiency of NBI for climate adaptation and the provision of other infrastructure services through more comparable and credible evidence on capital and operating costs and benefits of NBI and how they perform compared to grey infrastructure alternatives.</p> <p>1.2 Increased confidence of all market participants in the use and performance on NBI. Market participants include project developers, design and engineering firms, cities, national governments, public and private investors</p>	<p>Output 1.1.1. Tools to identify, select, value, record and communicate NBI solutions.</p> <p>Includes simulation models and templates for expressions of interest, project screening, project selection, spreadsheets for recording simulation outputs, documenting results.</p> <p>Output 1.2.1. Customised valuations on nature-based infrastructure. Target: 10 valuations, every 12 months. 6 valuations in the first year of execution. Each Valuation will include the following,</p> <p>- Quantification of ecosystem services (biophysical value) and \$ value of ecosystem services</p> <p>- \$ value of capital and operating costs of traditional</p>	SCC F-A	1,134,986.14	2,342,039.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 2. Data Management and Dissemination	Technical Assistance	<p>2.1 Decision makers and infrastructure planners have access to data on the performance and costs of NBI.</p> <p>2.2 Decision makers are able to use the database to compare performance and costs of NBI with conventional grey infrastructure solutions.</p> <p>2.3 Uncertainties related to the use of NBI begins to decrease. Market participants begin to trust NBI as a sound and predictable adaptation solution.</p>	<p>Output 2.1.1 Interactive online database with downloadable excel spreadsheets.</p> <p>Output 2.1.2. Bi-annual updates of the database.</p> <p>Output 2.2.1 Record on user engagement and number of downloads. (Reports on activities to help stakeholders use the database for adaptation and infrastructure decisions).</p>	SCC F-A	66,220.18	113,734.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 3. Capacity Building and Knowledge Management	Technical Assistance	<p>3.1 Decision makers have more knowledge and less uncertainties on the performance of NBI. They hence begin to include NBI in adaptation plans and infrastructure plans.</p> <p>3.2. Improved capacities of decision makers to compare the performance and cost of NBI with grey infrastructure.</p>	<p>Output 3.1.1. Web-based massive online open course (MOOC) including syllabus, modules, learning objectives, and user feedback questionnaires.</p> <p>Output 3.1.2. Record on registration and user feedback</p> <p>Output 3.1.3. Annual update of teaching materials based on user feedback.</p>	SCC F-A	151,560.01	254,095.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 4. Outreach and Partnership	Technical Assistance	<p>4.1 NBI becomes a systematic consideration when planning adaptation and infrastructure.</p> <p>4.2 NBI becomes the preferred option and even maybe the default option for adaptation.</p>	<p>Output 4.1.1. Nature-based Infrastructure Resource Centre established at IISD as a project execution unit. Includes dedicated website for featuring components 1, 2 and 3 and project governance arrangements such as high-level project steering committee, technical advisory committee and processes and procedures for project execution.</p> <p>Output 4.1.2 Communication and outreach strategy to sustain the NBI Resource Centre and partnership beyond the project. Include donor outreach, dissemination, social media, advocacy, high level events, collaborative outreach with GEF, MAVA Foundation, GCA, UNIDO, IISD Global Adaptation Network, expert community on</p>	SCC F-A	498,827.91	843,703.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
Component 5. Monitoring and Evaluation	Technical Assistance	5.1. Project implementation informed by results from mid term review and up-scaling informed by the results of an independent terminal evaluation.	Output 5.1.1. Mid term review and independent terminal evaluation	SCC F-A	48,319.92	89,638.00
Sub Total (\$)					1,899,914.16	3,643,209.00
Project Management Cost (PMC)						
SCCF-A			100,085.84	179,277.00		
Sub Total(\$)			100,085.84	179,277.00		
Total Project Cost(\$)			2,000,000.00	3,822,486.00		

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Others	MAVA Foundation	Grant	Investment mobilized	2,000,000.00
Civil Society Organization	IISD	In-kind	Recurrent expenditures	1,533,776.00
Others	ECMWF	Grant	Investment mobilized	236,960.00
GEF Agency	UNIDO	Grant	Investment mobilized	51,750.00
Total Co-Financing(\$)				3,822,486.00

Describe how any "Investment Mobilized" was identified

1. The MAVA foundation is a Civils Society Organisation with the mission to conserve biodiversity for the benefit of people and nature by funding, mobilising and strengthening partners and the conservation community. This project is considered to be instrumental and synergetic to the goals pursued by the MAVA Foundation to promote Nature Based Infrastructure (NBI) approaches for climate change adaptation. Therefore, the MAVA Foundation will provide a grant amounting to U\$ 2,000,000 towards the execution of this UNIDO implemented project. The MAVA Foundations? contribution will be provided directly under a separate grant agreement to IISD. Taking into consideration that the MAVA foundation will cease to exist by the 31 December 2022, all financial contributions provided by the MAVA foundation will have to be used by IISD for the purpose of the project ?Using systemic approaches and simulation to scale Nature Based Infrastructure for climate adaptation? before this date. 2. ECMWF is the European Centre for Medium-Range Weather Forecasts. ECMWF is both a research institute and a 24/7 operational service, producing global numerical weather predictions and other data for our Member and Co-operating States and the broader community. ECMWF operates two services from the EU?s Copernicus Earth observation programme, the Copernicus Atmosphere Monitoring Service (CAMS) and the Copernicus Climate Change Service (C3S). In 2020 ECMWF has contracted IISD for EUR 200,000 to deliver on the project entitled ?Sustainable Asset Valuation (SAVi): Demonstrating the Business Case for Climate-Resilient and Sustainable Infrastructure?. This contract aims to integrate CDS products into the Sustainable Asset Valuation (SAVi) assessment methodology and test this integration on 4 four real time infrastructure uses cases. The objective is to improve the SAVi analyses with more accurate climate data, generated through C3S datasets and products as made available via the Climate Data Store. This activity is synergetic and catalytic for the proposed (see para 2 baseline assessment).

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount(\$)	Fee(\$)
UNIDO	SCCF-A	Global	Climate Change	NA	2,000,000	190,000
Total Grant Resources(\$)					2,000,000.00	190,000.00

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required

☐

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,750

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)
UNIDO	SCCF -A	Global	Climat e Change	NA	50,000	4,750
Total Project Costs(\$)					50,000.00	4,750.00

Part II. Project Justification

1a. Project Description

- 3. There are no changes in alignment or project design.

Additional details on 3) Proposed Alternative Scenario are provided. These details demonstrate that the innovative elements of this project are tried, tested and validated.

4. Most of the additional clarification pertains to component 1 (as per Table B of the PIF), Valuation of Nature Based Infrastructure.

- ? What is the full scope of the ecosystem services, co-benefits, externalities, and climate scenarios that will be included in the valuation? Annex 1 provides a draft overview of the ?menu? of ecosystem and infrastructure services that will be subject to valuation under Component 1. This overview will be finalized and published on the NBI Resource Center?s website at the start of the project. Interested stakeholders and project proponents will be able to choose from this ?menu? which ecosystem services, co-benefits, externalities and climate scenarios are most relevant for their project.

How will NBI projects be selected for valuation? See annex 2 for the draft project selection protocol. The selection protocol will be finalized and published on the NBI Resource Center?s website at the start of the project. The protocol includes a draft questionnaire and draft selection matrix. Both will be finalized during the inception phase of the project and validated by the Project Steering Committee. The selection matrix will also be made public for all interested stakeholders and project proponents who wish to submit an NBI project for valuation. The project selection protocol has been reviewed by the GEF Secretariat and changes have subsequently been incorporated to respond to the GEF Secretariat?s comments.

- ? Additional clarification on how capacity-building occurs across the valuations. Stakeholders will be actively involved across the NBI Valuation workflow to ensure uptake of the results of the assessments, but also to build their capacity to understand and refine a systemic analysis, and to use the results in decisionmaking processes of NBI projects. This is detailed in Annex 6 ? Stakeholder Engagement Plan.

- 5. Terms of Reference for the project steering committee (PSC) and technical advisory committee (TAC) and a suggested list of members are provided in Annex 3 and 4. The composition of the technical steering committee consists of the following representation: GEF Secretariat: Manager Special Climate Change Fund; MAVIA Foundation: Director Sustainable Economies; UNIDO: Management level staff; IISD: Executive Director IISD Europe; The

TOR of the PSC has also been reviewed and discussed with the GEF Secretariat during the PPG Phase.

- ? Technical description of the simulation approaches; Annex 9 provides an overview of the technical information on the simulation approaches.
- 6. Additional information on the indicators in relation global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF): there was a mathematical error in the Tracking Tool submitted with the PIF. The total number of direct beneficiaries is the sum of 57,500 men and 57,500 women, totalling 115,000. The number of policies affected by the project is 15. The project will undertake 46 NBI valuations over 5 years. We estimate that approximately 50 per cent of these projects will directly inform and contribute to local, sub-national, national, regional or global policy priorities. Examples of these policies include national adaptation plans (NAP), identification of projects for inclusion in NDCs and national communications to the UNFCCC, infrastructure master plans, urban master plans, rural development plans that involve transport, agriculture, residential developments and more. We expect the project to influence the policies and plans on an incremental basis. Policy processes are also complex and can take time. Hence, this target indicator is expected to be lower than 23. We expect a total number of policies and plans that will mainstream climate resilience to be 15. However, if the projects evaluated are already part of certain ongoing policy processes, we expect this number to be higher.

Additional information is also provided in relation to changes with regards to element 5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing

- 7. There is an adjustment in budget allocation between the 4 components: the budget for component 2 Data management and dissemination is reduced by U\$ 108,837 to reflect a lower maintenance cost of the database than originally foreseen at the PIF stage, while the budget for component 1 Valuation of NBI is U\$ 34,009 higher than at the PIF stage. Furthermore, the budget for component 3 Capacity building and knowledge management has been increased by U\$ 26,430 and the budget for component 4 Outreach and partnership has been increased by U\$ 48,398. These adaptations were made in light of the detailed planning process carries out during the PPG phase.
- 8. During the PPG phase IISD could secure an additional co-financing by ECMW, the European Centre for Medium-Range Weather Forecasts, to the amount of Euro 200,000 (U\$ 236,960).

1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description):

- 9. The impact of climate change has been often at landscape and watershed scale requiring a more comprehensive approach and recognizing the role, potential and performance of nature in providing

adaptation benefits. Without due consideration of the benefits and cost efficiency of Nature Based Infrastructure in the adaptation strategies, the over reliance on built or grey infrastructure may lock-in high carbon assets which are expensive to build and maintain. They also provide limited long-term adaptation benefits to vulnerable communities. Grey infrastructure is also material intensive with high environmental impacts across its life cycle - traction, processing, refining, transport and storage, component manufacturing, construction, maintenance, and disposal. Impacts at the extractive phase and the siting and design phase have particularly significant impacts on land, biodiversity, water, and air. Therefore, excessive emphasis on built or grey infrastructure could also lead to a degradation of land, loss of water bodies and loss of biodiversity making the ecosystem and related livelihoods further vulnerable to climate extremes.

10. There is a growing realisation that Nature Based Infrastructure (NBI) can be a cost-effective solution for reducing vulnerability of communities and ecosystems to changing climates and extreme weather. There is also a growing appreciation that NBI can provide a series of positive externalities: they can slow further warming, boost biodiversity, and enhance ecosystem services. NBI can include bio-engineered components that increase their ability to withstand and guard against extreme weather. In addition, NBI can improve adaptive capacity of communities through enhanced socio-economic benefits such as jobs, increased productivity, and community engagement. Using NBI also reduces the need for governments to mobilize capital to finance expensive grey infrastructure solutions for adaptation.

11. Given that sovereign debt and budget deficits are preoccupying governments all over the world, it is even more important that policy makers step-up to use the natural capital of their countries to enable economically cost-effective adaptation and infrastructure service provision. In the post COVID-19 era, where all governments have greatly increased sovereign borrowing, the focus ensuring that stimulus spending brings value-for money will be paramount. To this end, countries will be urgently looking for new, innovative and cost effective solutions for infrastructure and adaptation. If they know how to value NBI they can more successfully use their natural ecosystems for climate adaptation and provision of infrastructure services rather than systematically raising debt and increasing public spending on grey-infrastructure solutions.

12. NBI can also help to address the massive financing gap for adaptive, resilient, and sustainable infrastructure. According to the Global Infrastructure Hub, the infrastructure deficit worldwide stands at over USD 90 trillion between now and 2040. Meeting this demand by relying only on traditional grey-built infrastructure is a missed opportunity; their carbon footprints can be high and their design for extreme weather resilience can be inadequate and expensive. Using NBI and properly valuing the economic benefits they provide, reduces these impacts and provides an impetus to consider ecosystems as tangible capital assets. NBI can also improve efficiency, productivity and resilience of built infrastructure improving their overall economic performance.

13. NBI also bring several co-benefits, i.e. positive externalities, including carbon sequestration, nutrient removal, water storage, harvesting and more. These have direct benefits for communities and livelihoods. Better use of NBI will strengthen livelihoods in both rural and urban settings. Larger scale NBI can also curb climate migration as healthy ecosystems coupled with other green technologies can sustain livelihoods across seasons and extreme weather events. The more NBI is scaled and integrated into planning and infrastructure master plans, the greater the opportunity for resilient livelihoods.

14. The barrier we face is that the potential for NBI to provide adaptation and infrastructure services has not been rigorously and systemically assessed. Policy makers and investors may know, anecdotally, that biologically diverse forests, mangroves, wetlands, grasslands and agricultural lands provide valuable ecosystem services and adaptation benefits and sequester carbon, but they don't know the biophysical and monetary value of these benefits and services. They also do not know if they can rely on NBI as they are not able to compare, for example, the adaptation services of one mangrove forest in geography X, with another in geography Y. Most importantly, they are not able to compare the capital and operating costs of NBI with grey alternatives for adaptation. Until we are able to easily and reliably determine the financial and economic value of NBI, they will consistently be overlooked as an infrastructure solution for adaptation and sustainable public services. This is the barrier that this project seeks to address.

15. Nature Based Infrastructure includes a) Natural ecosystems that can be conserved, rehabilitated and maintained in a productive state to deliver a range of ecosystem services and improve resilience against extreme weather. b) Hybrid infrastructure, also referred to as grey-green infrastructure that combines engineered and nature-based solutions. These include constructed wetlands, porous pavements, bioswales for stormwater runoff, sustainable urban drainage systems (SUDS), rain gardens, etc.

16. This proposal targets projects/interventions/programmes that integrate the conservation and regeneration of natural ecosystems to improve climate adaptation. Interventions can be in rural areas or adjacent to cities and include constructed or bioengineered elements such as artificial wetlands.

2) the baseline scenario and any associated baseline projects:

17. There are two ways of defining the baseline scenario against which the project can be evaluated. On the one hand, the degradation of ecosystem services is on the rise, due to the lack of appreciation for the services it provides. This results in additional challenges, such as rural to urban migration and lack of access to resources and services. The restoration of ecosystems is required to support a variety of beneficiaries realize new opportunities. On the other hand, there is lack of knowledge on the performance of NBI, of measurement frameworks, of methods for quantification, and of approaches to involve multiple stakeholders. Lack of knowledge in turns prevents and pre-empts the appreciation of the value of NBI.

18. The entire development community, governments, investors, donors, and the international finance institutions (IFIs) are just beginning to understand that nature can be conserved, restored and used to deliver ecosystem and derived infrastructure services and adaptation benefits. The global development community is also beginning to realise that in some instances, nature can also be used as a substitute for grey infrastructure and also to compliment and increase the efficiency of grey infrastructure.
19. IISD has developed an 11-step plan to make NBI an asset class. This plan is based on the experience accumulated over four years working on the quantification of the value provided by NBI and the socialization of the results of the analysis. This assessment shows that many actors are working in the field, but all in isolation and with limited interaction. Some are working on the quantification of ecosystem services (e.g. The Nature Conservancy, WWF, Conservation International), others on the economic valuation (IISD, World Bank WAVES), others on the standardization of methods (UN SEEA), others on implementation (e.g. GEF and GCF), and finally others on the socialization of results (UNEP The Economics of Ecosystems and Biodiversity, The New Climate Economy).
20. The development community only starts to understand that built alternatives are often material and resource intensive and generally have a much larger environmental footprint than NBI across their life cycle. Decision makers may not always consider how natural ecosystems can be restored and maintained to provide adaptation services. For example, in an effort to prevent floods from storm surges, many cities resort to building sea walls instead of looking into the value of restoring and bioengineering mangroves to provide the same adaptation benefit, as well as other co-benefits. Another example is that to provide clean water for municipal use, the focus is usually on building water purification plants instead of working to restore ecosystems upstream that would provide natural filtration and purification. This approach results in the expected growth capital and operation and maintenance infrastructure, with the latter increasing pressure on public finances and reducing the potential for new investment.
21. But this is slowly beginning to change. E.g. IUCN has developed the Global Standard for Nature-Based Solutions for use by governments, businesses, investors, communities and NGOs in order to ensure that Nature-Based Solutions (NBS) reach their potential to address societal challenges. Nature Based Solutions (NBS) are being promoted as an action track of Global Commission on Adaptation.
22. We are seeing that decision makers can embarked on NBI, even without considering their positive externalities and these projects are highly cost effective. For example, the city of New York has spent \$1.4 ? \$1.5 billion on NBI for watershed protection projects. Had the City opted instead to build a filtration plant, taxpayers would had to pay approximately \$6 billion to build the plant plus another \$250 million per year for maintenance.

23. The growing track record of the methodology proposed for the NBI valuation indicate a growing interest in NBI and how NBI can be better integrated into renovation, refurbishment, urban planning, national adaptation plans and the like. For example, the valuation done on the Saloum Delta, Senegal, is helping stakeholders to work with conservation and restoration specialists to increase the delivery of adaptation services that the Delta can provide. Similarly, agricultural communities in Sardinia are using NBI assessments to maintain wetland ecosystems to reduce coastal erosion and flooding. They are realizing that in doing so, they also protect the taste and quality of their livestock and fisheries by-products. Further details can be found at <http://iisd.org/savi/>.

24. Stakeholders are only beginning to work on valuing nature and the ecosystem services nature provides in economic and financial terms. The UN System of Environment and Economic Accounting (UNSEEA) is working on guidelines for ecosystem accounts (SEEA-EEA, Experimental Ecosystem Accounts) and some countries have launched calls for submissions on the economic value of biodiversity. The Global Commission on Adaptation has identified nature-based solutions as a core adaptation strategy. 'Valuing Water' will be the topic of the 2021 World Water Development Report, one of the annual flagship publications prepared by UN-Water. Under the International Water Focal Area, the GEF has already supported the development of a methodology to determine the economic value of water related ecosystem services (<https://iwlearn.net/valuation>). This hands-on methodology is based on a benefit transfer approach developed by UNIDO. It builds on the experience and results of the economic valuation of the ecosystem services provided by the Guinea Current Large Marine Ecosystem.

25. There is extensive research available on ecosystem services and many projects on the payment for ecosystem services are being implemented all over the world. But at the same time, the economic and financial value of ecosystem services for climate adaptation and provision of public good services are still not well understood nor accepted by policy makers focusing on climate adaptation and infrastructure. As a result, the track record on the performance of Nature Based Infrastructure as an adaptation and infrastructure service solution is in its infancy. Adaptation and infrastructure decision makers need more: a) predictability, for example, will a mangrove forest effectively reduce coastal erosion that will in turn reduce the impact of storm surges and flooding as extreme weather incidences increase? b) comparability, for example, will a mangrove forest in country Y reduce erosion and flood damage to the same extent as a mangrove forest in country X?
26. Ultimately, the baseline scenario is one in which NBI will continue to be overlooked; investments will primarily be allocated to built infrastructure; adaptive capacity to climate change will continue to decline; fiscal budgets will be under increased pressure due to the need for new investments and the mounting cost of maintenance and reconstruction due to climate impacts; it results that inequality will continue to increase, creating more pressure on urban development.

27. Nature Based Infrastructure has a nascent track record and as a result, has a lower level of predictability and comparability. Furthermore, there is only limited knowledge on easily applicable methodologies to determine the economic value of NBI and the positive externalities provided by NBI. Consequently, NBI have not yet been mainstreamed into adaptation and infrastructure planning.

28. The purposes of this project Nature Based Infrastructure refers to deliberately planned and managed natural ecosystems and working landscapes to:

- enhance the delivery of ecosystem services including those that are analogous to conventional/grey public infrastructure
- Enhance the delivery of co-benefits to human populations,
- reduce the need for traditional grey infrastructure
- serve as a substitute for traditional grey infrastructure
- increase the efficiency of traditional grey infrastructure.

3) the proposed alternative scenario with a brief description of expected outcomes and components of the project:

29. This project addresses the challenging scenarios outlined above. As elaborated in the section how co-financing was mobilized, the MAVA Foundation will provide a grant amounting to US\$ 2,000,000 towards the execution of this project. The MAVA Foundation's contribution will be provided directly under a separate grant agreement to IISD. Taking into consideration that the MAVA foundation will cease to exist by the 31 December 2022, all financial contributions provided by the MAVA foundation will have to be used by IISD for the purpose of the project. Using systemic approaches and simulation to scale Nature Based Infrastructure for climate adaptation before this date. Consequently, the vast majority of the costs incurred by IISD for the execution of this project until the 31st December 2022 will be covered from the grant provided by the MAVA Foundation, whereas the funds provided by the GEF will be used to cover the costs for project execution by IISD in the consequent years. Nevertheless, some cost elements occurring for the execution of this project by IISD until 31st December 2022 will already be covered under the Project Execution Agreement that UNIDO will establish with IISD for the entirety of the project execution period.

30. The project will be implemented across 5 components.

3)1) Component 1: Valuation of NBI. The project will generate customised (or project specific) analyses of the economic and financial value of Nature Based Infrastructure.

Project outcome 1.1 Improving the predictability and knowledge on the economic efficiency of NBI for climate adaptation and the provision of other infrastructure services through more comparable and credible evidence on capital and operating costs and benefits of NBI and how they perform compared to grey infrastructure alternatives.

Project outcome 2 Increased confidence of all market participants in the use and performance on NBI. Market participants include project developers, design and engineering firms, cities, national governments, public and private investors

Output 1.1.1 Tools to identify, select, value, record and communicate NBI solutions. This includes simulation models and templates for expressions of interest, project screening, project selection, spreadsheets for recording simulation outputs, documenting results.

Output 1.2.1 customized valuations on NBI projects

31. The target will be 10 valuations every 12 months, but with 6 valuations only in the first 12 months. The objective is to help stakeholders understand the economic and financial benefits of using natural and bioengineered ecosystem solutions for climate adaptation.

32. Who will conduct the valuations?

Valuations will be provided by the Nature Based Infrastructure Resource Centre (NBI Resource Centre). The Centre will not only implement this project but also raise awareness, raise capacities and improve the enabling environment for NBI more widely. The Centre will be established at IISD. The Center will continue to work after the close of this project. Annex 8 includes the preliminary NBI resource center business plan.

33. How will NBI projects be identified and selected for valuations?

The NBI Resource Centre will invite public, private and civil society entities to submit NBI projects for valuation. It will also solicit NBI projects from strategic partners and encourage stakeholders to submit projects for valuation. Thus, project sourcing happens via two routes:

- ? Any project proponent can submit a request for valuation of an NBI project on the NBI Resource Center (online)
- ? The NBI Resource Center will also solicit potential partners and project proponents to submit a request for valuation (online)

The solicitation of NBI projects from strategic partners will happen through strategic outreach and engagement with the networks of the MAVA Foundation, GEF, GEF implementing agencies e.g. IUCN, Global Commission on Adaptation or GCA (the vanguard cities and countries identified under the NBS Action track), the Private Financing Advisory Network (PFAN), UNIDO and IISD.

To increase efficiency and transparency in the sourcing and selection of NBI projects, IISD has developed a project selection protocol, available in annex 2. This selection protocol has already been reviewed by the GEF Secretariat and adjusted based on their comments and suggestions. The selection protocol includes a questionnaire and selection matrix with criteria based on which projects will be selected for valuation.

The NBI resource center will provide information on the projects against the criteria of the selection matrix and the Project Steering Committee will decide which projects will be selected for valuations. The NBI Resource Center will subsequently carry out the valuations.

34. What is the simulation methodology that will be used to develop the NBI valuations? Why is the methodology innovative?

The simulation methodology draws from the Sustainable Asset Valuation or SAVI, see iisd.org/savi for full track record. The methodology is participatory, all models are co-created with NBI project stakeholders. Its features are:

- based on systems thinking and system dynamics simulation, coupled with project finance modelling.
- customised to each individual Nature Based Infrastructure project or policy.
- designed with the input of stakeholders, models are co-created through a multi-stakeholder approach that enables stakeholders to identify the material risks and opportunities that are unique to the NBI project.
- Incorporates best-in-class climate data from the EU Copernicus Climate Data Store.

The simulation methodology is further detailed in Annex 9.

35. What are the outputs of the valuations? What are the KPI that will be calculated?

1. the dollar value of ecosystem services highlighting those that provide carbon sequestration and adaptation benefits;
2. the dollar value of adaptation benefits and other biophysical, social and economic co-benefits (positive externalities). For example, labour income, job creation, increased industrial or agricultural outputs; lowered spending on built infrastructure.
3. the dollar value of the capital and operating costs of grey infrastructure needed to provide the same volume of adaptation benefits;
4. scenario analysis on how ecosystem services and adaptation benefits will be affected by climate change, population growth, land cover change, and other pressures over time. Data from the simulation of climate change scenarios will be drawn EU Copernicus Climate Data Store. This is made possible through the ongoing collaboration between IISD and the EU Copernicus Fund and the Copernicus Climate Data Store. In 2020-21, IISD is testing the use of the EU Copernicus Climate Data in 2 GEF projects.

36. Additional innovative features include:

? As the valuations will include comparison with the capital and operating costs of grey infrastructure, this project provides the fundamentals to explore blended capital solutions and crowd-in the interests of private investors. The valuations, as outlined earlier, produce the justification governments need to provide risk capital to projects integrating Nature Based Infrastructure. This could be in the form of grants, equity, or subordinated debt. Risk capital is an essential component of any blended finance structure. It enables the participation of other sources of capital. It also decreases the overall cost of financing by improving the credit quality of the more senior tranches of financing. Project developers and investors, on the other hand, will have access to a preliminary financial assessment on how nature-based solutions compare to built infrastructure alternatives. For this purpose, a project finance model will be developed for projects where this would be applicable. The financial model demonstrates how NBI impact the financial viability of the project. The modelling will include how cash flows can service the debt and generate return for shareholders under different levels of NBS integration. The results of the financial analysis can be the starting point for the financial feasibility assessment conducted later in the project development cycle.

? The valuations will also calculate both the dollar value and biophysical value of the adaptation benefits and other co-benefits provided by Nature Based Infrastructure. Natural ecosystems provide many services and benefits and limiting valuation to just one service or benefit is a missed opportunity. It also does not provide for the fair comparison of nature-based infrastructure with grey alternatives that do not offer so many co-benefits. For example, a wetland provides adaptation services such as the prevention of erosion and the accumulation of sedimentation that provides a natural barrier to prevent flood from extreme weather. But the wetland also absorbs nutrients, stores water, purifies water, sequesters carbon and much more. Similarly, the wetlands also provide livelihoods such as fisheries, tourism, harvesting, etc. The wetland can also provide increases in real-estate value of neighboring properties and in some cases, reductions in weather-related insurance premiums. The valuation of the wetland focusing only on its adaptation potential is therefore incorrect, and moreover, a missed opportunity. It is very important that markets and stakeholder value Nature Based Infrastructure for the

full range of services provided, as otherwise, they will continue to undervalue natural capital in favour of grey alternatives.

? The systems dynamics simulation will include spatial data and spatial dynamics. Using spatial assessments the analysis will indicate what positive and negative outcomes take place in a specific location, and what economic actors and ecosystems will be impacted as a result. Any mitigation option will therefore have to be designed taking into account local impacts and local dynamics, with the option to offset, in other locations, global drivers of change. For example, GHG emissions that drive global climatic changes can be offset elsewhere. The assessments will also make a clear distinction between the different types of ecosystem services that are included in the valuation. In summary, the use of spatial data and spatial dynamics will make the valuations more accurate.

37. All these elements, - the cross disciplinary simulation, the valuation using best-in-class data including the EU Copernicus Climate Data Store and the customisation to individual projects and policies - makes this project unique and innovative.

The project also addresses the GEF policy demand for systemic analyses to increase the systemic impacts of adaptation.

38. Moreover, it provides the fundamentals to build comparable and verifiable track records on the economic and financial case for using nature in climate adaptation and infrastructure service provision. This unique and innovative mix of expertise, data and disciplines will go a long way to enable all stakeholders to systematically consider Nature Based Infrastructure in their mix of options for adaptation and infrastructure development.

39. What are the credentials of this simulation methodology?

The methodology has been validated and tested on over 15 projects. See full track record at the website of the Sustainable Asset Valuation or SAVi <https://iisd.org/savi/> . The methodology has been selected by the EU Copernicus Climate Data Store for the integration of Copernicus climate data into all simulation models. The simulation-derived outputs of this proposal will all be hence based on best-in-class climate data. Indeed, during 2020-21, IISD has tested the integration of the Copernicus data into SAVi models, including on 2 GEF funded projects under the GEF Sustainable Cities Programme and Platform.

40. Further credentials are that in May 2020, UN System for Environmental and Economic Accounts, Experimental Ecosystem Accounts (SEEA EEA) has included the methodology (as in SAVi) in the Guidelines on the use of Ecosystem Accounts in Policy Scenarios.

41. The System Dynamics (SD) modeling field was created in the late 1950s by Dr. Jay Forrester at the MIT. It has a long history of success in informing public policy and this method is now taught in more than 100 universities worldwide. SD has been used as the main underlying method for Green Economy and Green Growth assessments by UN Environment, in national green economy planning in more than 30 countries by the Global Green Growth Institute; in landscape planning and analysis by WWF, The Nature Conservancy and by the US EPA in more than 10 countries. The New Climate Economy (NCE) is using systems dynamics as the main tool for the creation of low carbon development strategies in 6 countries.

42. Project finance (PF) modeling in its current form dates back to the 1980s, enabled by the emergence of spreadsheets. Investors use PF models to assess the financial feasibility of projects, determine the optimal financing structure (e.g. debt sculpting) and stress-test the project's viability under different risk scenarios. In order to ensure high model quality and readability, the PF models built for SAVi and this project follow the Corality SMART project finance modelling best practices.

43. What type of ecosystems and ecosystems services will be included in the valuations?

44. Nature Based Infrastructure include many ecosystems - wetlands, mangroves, forests, lakes, lagoons, dunes, rivers, croplands and grasslands. We will use the System of Environmental and Economic Accounts, Experimental Ecosystem Accounts (SEEA-EEA) as main reference.

45. The ecosystem services that will be valued in economic terms will include provisioning, regulating, habitat and cultural services; the exact mix will be determined by the adaptation and infrastructure priorities of local stakeholders. Priority will be given to:

- Ecosystem services that either enable specific socioeconomic activities, reduce the cost of operations for both private and public actors, reduce or avoid extra-budgetary costs and thus reduce the costs of adaptation and damage related to climate hazards.
- Ecosystem services that can complement and even replace grey-built infrastructure to provide adaptation benefits/services. For example, water storage, prevention of erosion, protection against water scarcity and drought, protection against floods, and soil formation and composition.
- Ecosystem services that provide wider 'infrastructure and adaptation co-benefits'. For example, water storage, carbon sequestration, air purification, nutrient filtration/water purification, water supply and discharge, protection against water scarcity and drought, protection against floods, and soil formation and composition.
- Cultural services that make direct contributions to primary and service sector outputs, for example: recreation, tourism, fisheries, agriculture, cottage industries, etc.

46. To provide for the fundamentals for blended capital, the valuation will also compare the restoration and maintenance costs of natural ecosystems with the capital and operating costs that would be required to build and maintain grey infrastructure alternatives that would provide the same magnitude of services.

47. Annex 1 details the menu of ecosystem services, direct benefits and co-benefits that can be included in the valuations. This menu will be published on the NBI Resource Center as a tool for discussion with project proponents on which ecosystem services, direct benefits and co/benefits will be included in the valuation.

48. Every valuation will emphasize direct climate adaptation benefits of NBI projects such as for example reduced flood risks and reduced damage costs from rising sea levels, or health-related benefits from reduced heat islands effects thanks to NBI projects in urban areas.

49. What types of NBI co-benefits will be valued in biophysical and \$ value terms? A more detailed version of this table can be found in Annex 1 ? menu of ecosystem services, direct benefits and co-benefits.

Co-benefits that will be valued in biophysical and \$ terms. Co-benefits particularly relevant for climate adaptation are marked with an *		
Groups of ecosystem services	Examples of ecosystem services	Co-benefits that are particularly valuable for adaptation
<ul style="list-style-type: none"> - Ecosystem services that either enable specific socioeconomic activities to reduce the cost of operations for both private and public actors, reduce or avoid extra-budgetary costs , reduce costs of adaptation and damage related to climate hazards - Ecosystem services that can complement and even replace grey-built infrastructure to provide adaptation benefits/services - Ecosystem services that provide wider ?infrastructure and adaptation services? and co-benefits? - Cultural services that make direct contribution to primary and service sector outputs 	<ul style="list-style-type: none"> - Carbon sequestration - Carbon storage - Habitat quality - Sediment retention - Air purification - Nutrient filtration/water purification - Water storage - Water supply and discharge - Soil formation and composition (land productivity) - Biodiversity (habitat quality) - Protection against water scarcity and drought - Protection against floods - Protection against vector-borne diseases 	<ul style="list-style-type: none"> ? Avoided investment in built infrastructure* ? Avoided O&M costs for built infrastructure* ? Avoided impacts of climate change on infrastructure (public and private, avoided reconstruction cost) * ? Avoided health cost (for households, workers) * ? Avoided investment in the health sector (e.g. from climate impacts, air and water pollution, vector borne diseases) * ? Improved nutrition (from avoided crop losses) * ? Higher value added (e.g. from agriculture*, as a result of reduced erosion, also recreation, tourism, fisheries, agriculture, cottage industries) ? Employment and income creation

50. How will the results of the NBI valuations be recorded and presented?

The results of each valuation will be documented in a standardized report format. It will include the full suite of simulation results including KPIs on financial performance. A technical annex will contain NBI valuation data and references, simulation models, data inputs sheets and a record on the co-design of the simulation with stakeholders.

Component 2: Data Management and Dissemination. Publicly available, on-line database that records data on the performance of NBI.

Project outcome 2.1 Decisionmakers and infrastructure planners have access to data on the performance and costs of NBI.

Project outcome 2.2 Decision makers are able to use the database to compare performance and costs of NBI with conventional grey infrastructure solutions.

Project outcome 2.3 Uncertainties related to the use of NBI begins to decrease. Market participants begin to trust NBI as a sound and predictable adaptation solution.

Output 2.1.1 Interactive online database with downloadable excel spreadsheets

Output 2.1.2 Bi-annual updates of the database

Output 2.2.1 record on user engagement and number of downloads

51. As the project gets under way, the database will be preliminary populated with data from the IISD track record. Thereafter, it will be updated as a continuous research effort. As NBI valuations are screened, selected and completed, these data will also be included. IISD will also investigate an additional feature to invite registered users and researchers to upload new data on the performance of NBI. The database will be hosted on the NBI Resource Center.

52. All the data and simulation models will be made publicly available. This is core to the design and objectives of this project. The use of NBI for climate adaptation cannot be scaled without increasing access to authoritative data that are organised and presented in a user friendly manner. Public data is also critical to build the enabling environment for NBI. Data is also needed to increase the credibility and predictability of NBI as a reliable and cost effective solution for climate adaptation. The project execution organisation, IISD, is a mission driven not-for-profit civil society organization. All its work is publicly available, and at no cost. IISD's experience has revealed that some NBI proponents/stakeholders initially did not want their valuations to be made public. In order to obtain the project specific data IISD had to sign non-disclosure agreements (NDA) with such NBI proponents/stakeholders. These NDAs have a clause that IISD has to obtain explicit written permission to publish the simulation results. So far, at the end of the analysis and valuation process, IISD could always obtain the permission to publish. IISD learnt that stakeholders' concern about their data being public was more due to: a) lack of experience with simulation-derived analysis; b) the very idea of assigning \$ values on environmental, social, economic and governance risks and externalities was new.

53. The database will be searchable and interactive. It will provide for the possibility to download data in the form of excel spreadsheets.

54. The purpose of the database is to record, publish and raise awareness on the types of biophysical and economic data that is needed to value Nature Based Infrastructure as an adaptation solution and an infrastructure service provider. The subsection above describes the multi-disciplinary valuation assistance that this project will provide. The database will be organised following the same rationale, each representing different ecosystem services, co-benefits, and comparison with grey infrastructure. Included herein will be a) indicators on the performance of different ecosystems (see attachment 1 on the different ecosystems that will be valued); b) assumptions and proxies used to estimate the volume and value of ecosystem services and co-benefits when project specific data is unavailable and unreliable; c) proxies used to compare the capital and operating costs of Nature Based Infrastructure with grey alternatives. d) indicators and proxies for the simulation of physical and transitional risk of climate change. The data on the physical climate risks is drawn from EU Copernicus Climate Data Store. This data is available due the ongoing collaboration between IISD and the EU Copernicu Program. IISD also developed an app to make the Climate related data for valuations more accessible for project proponents and stakeholders. The app is available at <https://cds.climate.copernicus.eu/apps/27053/iisd-demo-new-1> (upon registration of a Copernicus profile; the app will be available for the wider public soon).

55. By way of example, IISD is in the very early stages of compiling prototype data to calculate the costs, risks and externalities of grey infrastructure. See the primer on this prototype at the following link. The proposed Nature Based Infrastructure database will incorporate the prototype data. <https://www.iisd.org/sites/default/files/publications/savi-database-primer-brochure.pdf> IISD also hosts the IISD ? Experimental Lakes Area Database, that is available for researchers and the wider public. We will draw from these experiences for setting up the database with appropriate protocols for data-sharing.

3)3) Component 3: Capacity building on the use of systemic approaches to value the adaptation services, infrastructure services and other co-benefits provided by Nature Based Infrastructure. This will be implemented as a massive open online course (MOOC), as well as throughout capacity building

Project outcome 3.1 Decision makers have more knowledge and less uncertainties on the performance of NBI. They hence begin to include NBI in adaptation plans and infrastructure plans.

Project outcome 3.2 Improved capacities of decisionmakers to compare the performance and cost of NBI with grey infrastructure

Output 3.1.1 Development of MOOC

Output 3.1.2 Records on registration and user feedback

Output 3.1.3 Annual update of teaching materials based on user feedback

56. Capacity building will focus on the use of systemic approaches to value the adaptation services, infrastructure services and other co-benefits provided by natural capital. This will be implemented as a massive open online course (MOOC) as well as through training sessions that will be provided alongside the valuations for project proponents and NBI stakeholders involved in the NBI projects that

receive valuations. In Annex 6 detailed information is provided how capacity building will be effected and assured through the NBI evaluation workflow.

57. Capacity building will also take place at events of the GEF, MAVA Foundation, UNIDO, IISD, and other organisations working on NBI.

58. The MOOC will be targeted at budget holders and decision makers on infrastructure and climate adaptation. It will be available for a wider audience with basic knowledge on macroeconomics, climate adaptation, sustainable development or nature-based solutions. While the specifics of the MOOC will be designed during the project, we envisage the course will be 6 weeks long, require 4 hours effort per week and be accessible initially at no-cost upon registration. As project implementation will progress the PSC will oversee work on a long term sustainability strategy for the NBI Resource Centre, which might also explore elements of cost recovery. A preliminary NBI Resource Centre business plan has been developed and is available in Annex 8.

59. The MOOC will encompass a cross disciplinary syllabus organised over several modules. To enhance learning, videos, links and background reading will be included. To increase learning impact, activities to help participants to apply the knowledge acquired to identify nature-based adaption opportunities and conduct preliminary valuations will also be included. The course will be promoted across the GEF, MAVA, UNIDO and IISD networks and beyond. It will be updated annually using the outputs from component 1 and 2.

60. Additional capacity building on the use of simulation for NBI valuation will be provided to the proponents of the NBI projects receiving valuation. This will be undertaken at the onset of the assessment when the simulation models will be co-created with stakeholder participation. Further capacity building will take place when the results of the valuation are complete and being presented in a webinar. The capacity building will cover the business case for NBI, the data used for the valuations and how the simulations were conducted. The table above (at the start of the PROJECT JUSTIFICATION SECTION) illustrates how capacity will be done throughout the NBI Valuation Workflow.

61. Events will also be organised at key forums of the GEF, UNIDO, GCA, MAVA Foundation and IISD to raise awareness of on the value of NBI on climate adaptation.

3)4) Component 4: Outreach and Partnerships.

Project outcome 4.1 NBI becomes a systematic consideration when planning adaptation and infrastructure.

Project outcome 4.2 NBI becomes the preferred option and even maybe the default option for adaptation.

Output 4.1.1 NBI Resource Center established at IISD as project execution unit.

Output 4.1.2 Communication and outreach strategy

Output 4.1.3 Annual impact report of the NBI Resource Center

62. The Nature-Based Resource Centre will be established by IISD to execute the project. Its main function will be capacity building and the provision of advisory and advocacy services. It will collaborate with all stakeholders to deliver all the project outputs. It will also engage with a wide arrange of stakeholders to improve the enabling environment for NBI and to promote the integration of NBI into adaptation projects and policies.

63. The NBI Resource Centre will undertake outreach to source NBI projects, raise project profiles and disseminate deliverables across the networks of GEF, MAVA Foundation, GCA, UNIDO, IISD and to the wider public. Outreach is also important to share lessons learnt, deepen stakeholder engagement and explore additional partnerships for funding and dissemination. Outreach will be targeted to donors, networks, private capital holders and the broader development community. This is a critical component to ensure the overall success of the project. We will also conduct dedicated outreach in collaboration with GEF, UNIDO, the MAVA Foundation and GCA including events and panels at their respective high level events.

64. Outreach includes a dedicated website, social media, newsletter, webinars, a strategy to target press and media and a strategy to tap into the networks of GEF, GCA, MAVA Foundation, UNIDO and IISD.

65. The NBI Resource Centre will also work to improve the enabling environment for NBI, within the scope and duration of this project and wider. The Centre will develop a longer term strategy for work and outreach during the course of this project.

66. Annex 8 details a preliminary business plan for the NBI Resource Center to ensure sustainability after the project ends. This will be further developed and refined throughout the implementation of the project.

3)5) Component 5: Monitoring and Evaluation

67. Monitoring and evaluation (M&E) will be conducted in accordance with established UNIDO and GEF procedures. The overall objective of the M&E is to ensure successful and quality implementation of the project by: i) tracking and reviewing project activities execution and actual accomplishments; ii) providing visibility into progress as the project proceeds so that the implementation team can take early corrective action if performance deviates significantly from original plans; and iii) adjusting and updating project strategy and implementation plans to reflect possible changes on the ground, results achieved and corrective actions taken.

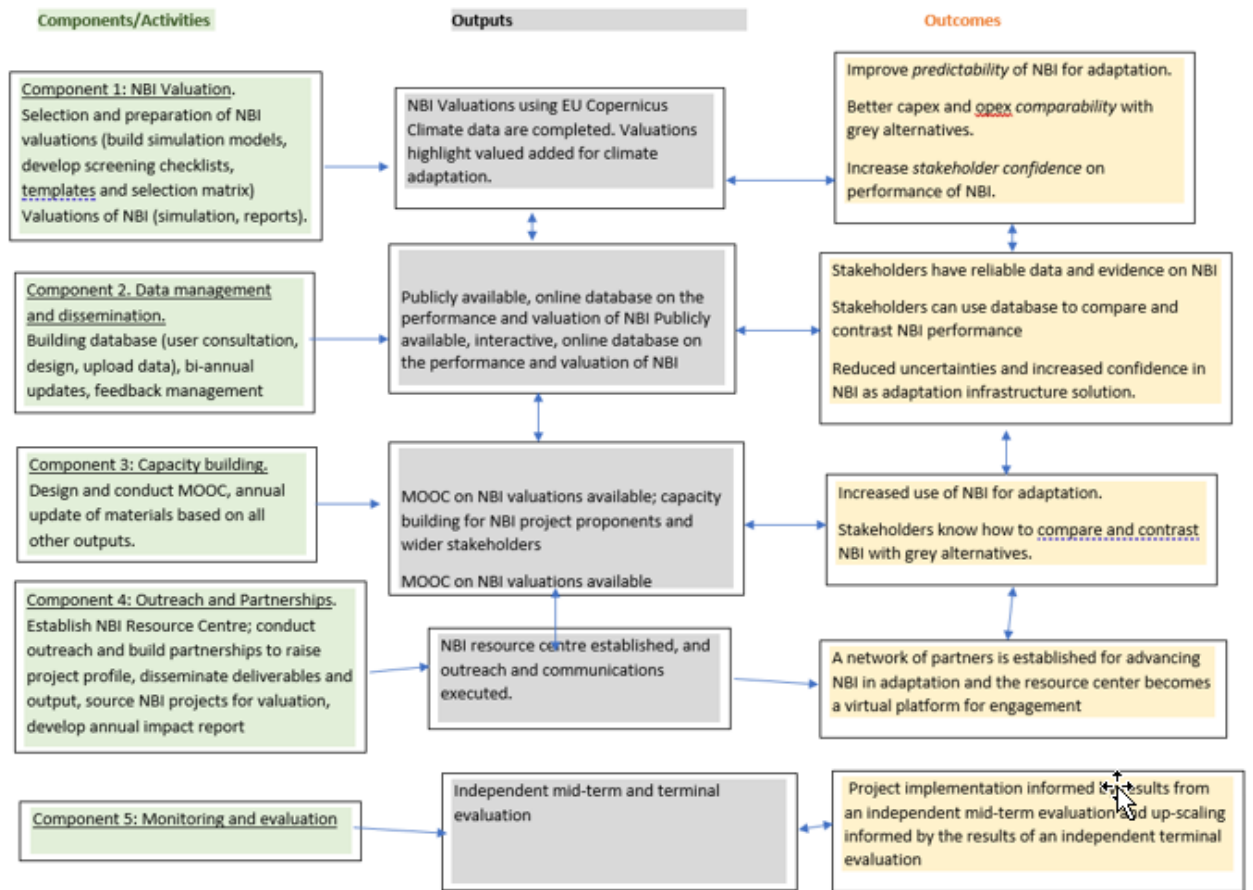
68. The Project Result Framework (Annex A) provides performance and impact indicators for project implementation/execution along with their corresponding means of verification. The actual progress will be reported against the workplan approved by the PSC. In case there are significant deviations between the forecasted workplan and actual implementation, corrective measures will need to be taken.

The budgeted monitoring plan including time-bound milestones and deliverables is presented in Section 9. Monitoring and Evaluation. As part of the project management activities IISD will monitor project delivery on a regular basis and will provide inputs into to annual PIR. In addition to the SCM meetings, which will be organized virtually twice per year, there will be an external mid-term review of the project conducted half way through project implementation and an independent terminal evaluation that will be carried out by UNIDO's evaluation office six months before project completion.

69. The M&E activities will enable assessment of social, economic, and environmental impacts, and at a minimum, it will account for global environmental benefits (GEBs), NBI related policies influenced gender mainstreaming, and investment into NBI leveraged. The data will be sex-disaggregated and gender-sensitive.

70. An overview of indicative costs of M&E activities is provided in the table in Section 9. Monitoring and Evaluation.

71. The Theory of Change is presented below:



4) alignment with GEF focal area and/or Impact Program strategies:

4)1) Alignment with CCA 2:

72. Using Nature Based Infrastructure as an adaptation solution can be more efficient and cost effective, especially when we value the economic and financial gains. This project will help stakeholders appreciate this and make investment decisions on adaptation infrastructure accordingly.

73. As countries prepare and implement their national adaptation plans, we observe a huge reliance on grey solutions and the siting of grey solutions at the detriment of naturally occurring adaptation services that ecosystems can offer. This project can address this issue and prompt the inclusion and mainstreaming of natural and bioengineered solutions into national adaptation plans.

74. In a similar vein, we also see national infrastructure master plans being developed with a focus entirely on grey assets and with little regard to how these assets will withstand extreme weather.

Indeed, using natural assets as providers of infrastructure services is nascent. As this project will compare the capital and operating costs of Nature Based Infrastructure with grey solutions, this project will also impact thinking and innovation on infrastructure master planning.

75. Systems Thinking, and System Dynamics simulation is at the heart of all the project components and outputs. In fact, this project directly delivers on GEG CCA2 as Nature Based Infrastructure will increase the systemic benefits of adaptation. Component 1, the analysis on the valuation of Nature Based Infrastructure uses Systems Thinking as underlying methodology. We place the project or policy in its unique, geographical, environmental, social and economic system and simulate how its performance - provision of ecosystem and derived adaptation and infrastructure services - are impacted by climate change and other material development scenarios. Component 2 includes all peer reviewed and project specific data used to conduct these analyses. Component 3 builds expertise using Systems Thinking and simulation on planning adaptation and infrastructure and thus proving the business case nature-based assets.

4)2) Alignment with CCA 3:

76. The NBI valuations produced in component 1 will increase predictability and comparability on the performance of NBI vis a vis private investors. These stakeholders need to have confidence that NBI will perform as forecasted. To build this confidence, they need to have information to compare and contrast the performance of several NBI projects across different geographies. This project will provide the critical mass of such information and provide for meaningful dialogue with private investors.

77. NBI project developers will also find this project to be of value, as it will add momentum to their advocacy on proposing and promoting NBI. This is of particular relevance to globally operating corporations that have realized that climate change impacts and the resulting loss of eco-system services is a threat to their business sustainability and have thus committed to engage as environmental stewards. UNIDO is actively cooperating with such industries. For example, UNIDO's collaboration with the HEINEKEN beverage producer and with the management entities of Eco-Industrial parks to promote public private partnerships on environmental stewardship activities. In this context, the NBI valuations will inform decision makers on the most cost effective NBI solution to adapt to climate change and to restore eco-system services as required. This will warrant the environmentally, socially and financially sustainable operation of businesses in harmony with neighboring communities and nature. Here, the NBI valuations will have a strong catalytic leverage towards transformative change. While the results of the NBI valuation will inform the investment decisions of dedicated private sector entities in line with their commitments, UNIDO will use the results for dialogue with government and IFIs as required for the up-scaling of the private sector led and financed NBI investments.

5) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing:

78. The support of the SCCF will provide for faster and more transformative adaptation by helping decision makers appreciate and calculate the value of ecosystem services and the value of co-benefits provided by NBI. The predictability and comparability of NBI with grey-built infrastructure is almost non-existent and the multiple benefits that NBI projects bring and make them economically and financially attractive are not being measured or assessed in a systemic manner. Ongoing practice shows that the integration of NBI into adaptation planning and infrastructure planning is increasing, but progress is very slow. Without better information on the economic advantages of NBI, public and private counterparties will move forward to plan and deploy grey alternatives with heavy carbon and environmental footprints across their life cycle. This will lock global societies into a green-house-gas-heavy and natural resource and material-consuming future. Natural resource extraction will increase, biodiversity related challenges will increase, and natural ecosystems will become even more vulnerable to climate change. The support of the SCCF is very important to prevent this occurrence and will be instrumental to increase the deployment of NBI. The support of the SCCF permits the building of the evidence base for the multiple benefits that NBI bring, beyond adaptation only. Co-creating the assessments and valuations of NBI projects with diverse groups of stakeholders is necessary to uncover, measure and quantify the benefits. This will allow NBI projects to become more mainstream into adaptation and infrastructure planning.
79. The project and SCCF support builds on a methodology which has been validated and tested on more than 15 projects. The methodology was also selected by the EU Copernicus Climate Data Store for the integration of climate data into simulation models. During 2020-2021, IISD also tested this integration in simulation models on infrastructure projects, including two NBI solutions for 2 GEF funded projects under the GEF Sustainable Cities Programme and Platform.
80. The COVID 19 pandemic coupled with increasing extreme weather and climate change related disasters is likely to accelerate the transition towards sustainable development and make the demand for NBI grow faster. Asset owners, investors, and insurers are also feeling the 'heat' as they suffer the financial losses caused by extreme weather and they are looking for alternative options. The support of the SCCF will provide a faster track-record and help build trust in NBI projects as viable investment alternatives for grey-built infrastructure.
81. Rolling out the valuation methodology on 46 NBI assessments under component 1 will allow a trackrecord on NBI to be build and available for all stakeholders with an interest in planning, developing and financing NBI projects. The online database will provide access to data necessary to create investment worthy NBI projects and the engagement with NBI project proponents and their stakeholders, through the 46 assessments will help to create a strong community of practice that is empowered to undertake systemic assessments on NBI projects and embed them in adaptation and infrastructure planning.

82. The proposal is co-financed by the MAVA Foundation, one of the most important funders of nature conservation, Nature Based Infrastructure, the use of Nature Based Infrastructure to increase resilience and broader research on economics for ecosystems and biodiversity. The goals of the MAVA Foundation are aligned with the goals of the SCCF - supporting developing countries reduce vulnerability to climate change, implement development strategies that are resilient to extreme weather and at the same time, increase deployment and expertise of low carbon technologies.

83. IISD is also providing in-kind contributions to this project. These contributions include funding use, since September 2016, to develop and validate the simulation methodology and establish its track record. It also includes funding to incorporate EU Copernicus Climate data into all the simulation models, including the models that will be used for this project. The use cases for the EU Copernicus climate data integration includes 2 GEF funded projects in Johannesburg.

6) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF):

84. This project will generate evidence, knowledge and skills to increase the use of NBI as an adaptation strategy. While 2,340 NBI stakeholders will be trained, the project will reach a total of 115,000 direct beneficiaries. The project will support valuation of NBI in 10 adaptation projects every year, with only 6 valuations planned for the first year, thereby enhancing their adaptation outcomes for vulnerable communities and ecosystems in terms of enhanced resilience to flooding, droughts and increased temperatures. It is expected that some 15 policies/development plans will be influenced to mainstream NBI in climate change adaptation. In addition to direct adaptation benefits, the project will contribute to provide climate change mitigation benefits and contribute to sustainable development goals (SDGs) on some 42,800 ha of land that will be managed for climate resilience. These co-benefits include carbon sequestration, nutrient removal, water storage, increasing biodiversity, prevention of erosion, protection of soil, contributing to sustainable land management, providing for harvesting and livelihoods, provision of ?cultural services? such as tourism and leisure and much more.

85. The targets for this project are documented in the tracking tool for CCA (excel file) and the explanation is provided in the ?Tracking indicators explanatory note?.

Tracking Tool for CCA - Explanation of Core Indicators

Core Indicator 1	Total no. of direct beneficiaries	115,000
	Male	57,500
	Female	57,500
Core Indicator 2	Area of land managed for climate resilience (ha)	21,425ha
Core Indicator 3	Total no. of policies/plans that will mainstream climate resilience	15
Core Indicator 4	Total no. of people trained	2,340
	Male	1,170
	Female	1,170

Core Indicator 1: direct beneficiaries

86. The project will undertake 46 NBI valuations over 5 years. We estimate that approximately 50 per cent of these projects will move forward for further discussions, negotiations, and implementation through public and blended financing. A further 50% factor is applied to reflect the incremental support that the valuations will provide to the NBI projects.

87. We estimate that each project reaches around 10,000 direct beneficiaries, including population living in and around the watershed. Hence, we estimate a total number of 23 valuations x 10,000 direct beneficiaries, and 50% of these to reflect the incremental support gives us **115,000 direct beneficiaries**, split equally between men and women.

Core Indicator 2: Area of land managed for climate resilience (ha)

88. The area of land managed for climate resilience will include areas upstream and downstream from the NBI projects. Some of the NBI are larger landscapes. Others will be smaller at the project scale, but will impact a much larger area.
89. The average area of land based on our previous experiences of valuations of NBI is 931ha per project. As we estimate that around half of the 46 NBI valuations will proceed for implementation. Also for this indicator we apply a further 50% factor to reflect the incremental support that the valuations will provide to the NBI project. Therefore, we expect an average of 21,425ha land area managed for climate resilience as a result of this project.
90. Core indicator 2 (area of land managed for climate resilience) is divided into 3 categories of land: agriculture, rural and urban. The NBI projects which will be evaluated can consist of or impact the 3 categories (and land cover classes that represent subsets of these three). However, the share of each category is currently unknown as the project will source 46 NBI projects throughout its duration. It is expected that these projects will represent a good balance across geographies, scales and sectors, covering a variety of NBI options. We therefore chose to equally divide the total area of land managed for climate resilience 21,425 ha into 3 equal shares (each 7,142 ha).
91. The estimation of the average land area is based on:

Valuation of NBI in Sardinia: S'Ena Arrubia wetland 223 ha and Corru S'Ittiri-Marcedd?-San Giovanni wetland 2,610 ha. The impacted area of these NBI is 70 and 20 times larger respectively.

Valuation of NBI in Canada: Stephenfield reservoir 370 ha and Pelly's Lake 121 ha. The whole lake area and agricultural area supported by the lake is between 10 to 50 times larger. For example, the lake supports 736 ha agricultural land for 1 crop.

Valuation of NBI in India: 2,200 ha lake area, with a much larger catchment area of 31,600 ha and a shore length of 15.5 km.

Valuation of NBI in Sri Lanka: 65 ha lake area

Core indicator 3: Total no. of policies/plans that will mainstream climate resilience

92. The project will undertake 46 NBI valuations over 5 years. We estimate that approximately 50 per cent of these projects will directly inform and contribute to local, sub-national, national, regional or global policy priorities. Examples of these policies include national adaptation plans (NAP), identification of projects for inclusion in NDCs and national communications to the UNFCCC, infrastructure master plans, urban master plans, rural development plans that involve transport, agriculture, residential developments and more. We expect the project to influence the policies and plans on an incremental basis. Policy processes are also complex and can take time. Hence, this target indicator is expected to be lower than 23.
93. We expect a total number of policies and plans that will mainstream climate resilience to be 15. However, if the projects evaluated are already part of certain ongoing policy processes, we expect this number to be higher.

Core Indicator 4: Total number of people trained.

94. The project will undertake 46 NBI valuations over 5 years. Capacity building and training will occur for every valuation at the stakeholder workshops, a webinar, the MOOC and back-to-back with high-level events that will occur during the project. Core indicator 4 (number of people trained) remains 2,340 equally divided between men and women. The number of people trained on climate change impacts and appropriate adaptation response measures contributes to the successful achievement of both outcomes 2.3 and 3.3.

NBI valuation: 10 stakeholders/project proponents x 46 valuations	460
Webinars: 30 participants x 46 webinars	1,380
MOOC: 50 MOOC participants x 5 years	250
Higher level events: 50 participants x 5 high-level events	250
Total	2,340

7) innovation, sustainability and potential for scaling up:

7)1) innovation

95. Innovation is ensured at the very outset as this proposal aims to scale the integration of NBI into climate adaptation.
96. Additional innovation is ensured through the use of Systems Thinking and System Dynamics simulation for knowledge integration in the valuation of NBI. Back casting and forecasting how ecosystem services will be impacted by various industrial, economic and climate change scenarios has not been done before. Comparing capital and operating costs of NBI with built alternatives is also innovative and will increase the business for integrating NBI into adaptation solutions. Based on project characteristics, the project finance simulation can also be used to compare the financial performance of NBI with grey alternatives. Decision makers will then

have both valuations to work with - a first in many instances. All these dimensions will support the deployment of adaptation strategies to maximise systemic, societal gains.

97. Innovation is also ensured as the simulation and NBI valuations will draw from the best-in-class climate data from the European Union Copernicus Climate Data Store. At the time of writing, IISD is integrating Copernicus Climate data into the baseline simulation models that will be used to implement this proposal. In addition, in May 2020, the UN System for Environmental and Economic Accounts, Experimental Ecosystem Accounts (SEEA EEA) included the methodology that will be used for the valuation of NBI (Sustainable Asset Valuation or SAVi) in their Guidelines on the use of Ecosystem Accounts in Policy Scenarios.

98. The most innovative element is the partnership between the GEF and the MAVA Foundation to scale the integration of NBI into climate adaptation plan, programmes and projects across the world. This has never been done before.

7)2) Sustainability

99. Sustainability of the project rests on the premise that this project will increase awareness and demand for NBI. With increased demand, the project could attract additional funders and develop innovative business models. Most importantly, this project will help decision makers conduct their own valuations of NBI, or at the very least identify opportunities and ask consulting experts the right questions. The objective of the project will then have been achieved. The sustainability of the NBI Resource Centre will be ensured as this project will increase the awareness on and demand for NBI. As implementation gets underway, simulation and valuation methodologies will also mature, and continuous innovation will take place. The sustainability strategy will be discussed by the PSC including looking at new donors and the development of new business models under which the NBI Resource Centre can continue to operate and innovate. This will inherently include the continuous upgrading of the web platform and MOOC. In keeping with its mandate to champion innovation for a sustainable world, IISD envisions that the NBI Resource centre will continue to operate after the close of this project, offering even more innovative advice, assistance and training on NBI in climate adaptation. To this end a preliminary business plan for the NBI Resource Center has already been established to ensure sustainability after the project ends. This will be further developed and refined throughout the implementation of the project.

100. The project with the NBI Resource Center begins in a strong position, compared to competitors in its space, as it is innovative in many respects: it is a first in integrating systems thinking, system dynamics and project finance models into infrastructure decisionmaking and NBI decisionmaking. It is also the first to offer customized services and simulations, first to integrate climate data with high precision from the EU Copernicus Climate Data Store as well

as to draw from the InVest model for spatially explicit information on the value of ecosystem services. It is also first to offer a high-degree of co-creation for each NBI project valuation and include stakeholders across the valuation, which increases their capacity to use the results and explain the value for money that NBI projects bring to investors and citizens.

Component 4 of the project is designed to ensure that the NBI Resource Center can keep its competitive advantage and throughout the project crowd-in more donors. It can be envisaged that at the end of 2025, the outputs of the NBI Resource Center will be such that new donors and new contract work with private parties can be envisaged. Annex 8 ? Preliminary business plan includes a preliminary overview of customer segments, market analysis, competitor analysis, a marketing plan and a long-term financing plan. The long-term financing plan is based on the innovation and diversification of services that the NBI Resource Center will offer after the project ends.

7)3) Potential for scaling-up

101. Scale-up is planned for through component 4, which seeks to widely disseminate project outputs. A communication and outreach strategy will be developed during the Inception phase of the project, and continually updated throughout. Links with the GCA, the UNIDO network, the MAVA Foundation network, and the IISD National Adaptation Plan (NAP) Global Network are key scaling strategies. The project is also expected to liaise with other GEF agencies to promote and scale the use of NBS through systemic valuations. Multilateral development banks and UN Agencies have NBI related programs on which engagement will be essential.
102. Demand for systemic valuations will also increase through IISD's current engagement with the EU Network Nature where key stakeholders for scaling the use of nature-based solutions come together; as well as through the work of the CCICED nature-based solutions subgroup.
103. The increased evidence base on the biophysical and financial performance of NBI projects will lead to a more robust track-record. This track-record will be established based on partnerships and close collaboration with NBI project proponents, who are expected to each take up leadership for scaling-up the use of the systemic valuation methodology and therefore the outputs of this projects. The capacity building activities as well as the MOOC will be geared towards empowering stakeholders to work with the results of the project, as well as to advocating and asking the right questions when planning for NBI projects. The online database will be developed in a user-friendly format, and with input from stakeholders, as to facilitate scaling-up.

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

104. This project is open to NBI proponents from all countries of the world including but not limited to the networks of the GEF, MAVI Foundation, GCA, UNIDO and IISD. It is expected that a majority of the NBI proposals will address adaptation issues in the countries most vulnerable to climate change.

105. The project selection protocol in annex 2 details how projects will be selected for valuation. Through the use of the project selection matrix the NBI Resource Center will keep a transparent and clear overview to help ensure that over the 5-year project duration projects of diverse nature will be assessed. The NBI Resource Center will present the information received, organized with colorcoding and per the project selection matrix to the Project Steering Committee. The Project Steering Committee will determine which project will proceed for a valuation.



Notre Dame Global Adaptation Index

106. The areas in red, including most of Africa and South Asia, are very vulnerable to climate change and ill-prepared to deal with its impact. The few countries in blue, including Vietnam, Ghana, Rwanda, Namibia and Botswana, are countries that are vulnerable but are relatively well equipped. Countries in yellow are less vulnerable but also less prepared. The countries in green, which include most of the world's developed countries, are both less vulnerable and better equipped to deal with the challenge of climate change.

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities

Private Sector Entities Yes

If none of the above, please explain why:

NA

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Please refer to Annex 6 - Stakeholder Engagement Plan.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

107. The entire project, across the components, emphasises stakeholder participation. Stakeholders involved in this project include policy makers working on adaptation and infrastructure, urban planners, urban resilience officers, NBI solution providers, project sponsors, project developers, local communities, and civil society. This includes the NBI and conservation experts, especially across the networks of the GEF, MAVA Foundation, UNIDO and the Global Commission on Adaptation. These stakeholders will be in the front line as we work to scope each NBI valuation, identify the ecosystem services and co-benefits most relevant to them, and co-create the design of the simulation. We will work with public budget holders, public funders and private financiers as we calculate and compare the capital and operating costs of NBI with grey infrastructure. These stakeholders will need this comparison to appreciate the business case for NBI.

108. This project was designed drawing from 4 years of experience in using the proposed methodology - co-creating each valuation to respond to the needs of its stakeholders.

109. A particularly important point is that each NBI valuation will be customised to each NBI project context, with the input of project proponents and their stakeholders. The simulation design will be co-created with the stakeholders. The NBI valuation workflow is given below:

Step 1	Engage with use case proponents including governments, UN agencies, cities, NGOs, project developers, design and engineering firms, private investors. Hold discussions with NBI project proponents and their stakeholders to understand and record project context and characteristics.
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Step 2	Deepen discussions with NBI project proponents to identify material project risks, material externalities, and more appropriate climate scenarios.
Step 3	Work with NBI project proponents to co-create causal loop diagrams to determine model boundaries, data needs, and emerging dynamics triggered by the project.
Step 4	Create the custom simulation models. Obtain and verify project-specific data. Complement with internationally recognized data sets. Determine model assumptions and verify data and assumptions with use cases.
Step 5	Run the simulation. Validate the model and results following best practice in system dynamics and project finance modelling. Simulate alternative scenarios to test model sensitivity.
Step 6	Analyse the results. Prepare report documenting results.
Step 7	Engage with NBI project proponents to present results. Discuss how the model outcomes will be used for making decisions on low-carbon and resilient infrastructure. Discuss options for raising blended capital.
Step 8	Publish and disseminate report on model outcomes. Engage with NBI project proponents to support next steps.

110. A full stakeholder engagement plan is described in annex 6. In October 2020 IISD held a series of online stakeholder dialogues with representatives from the private sector, public sector, civil society and academia. IISD presented the project during 3 online meetings, including the valuation approach and provided more detail on the different components of the project. There was also an opportunity for discussion on barriers to scaling NBI projects during which IISD collected feedback from participants.

111. The response was positive, and participants validated the importance of the 4 components of the project, and how the components respond to the barriers on scaling NBI for climate adaptation.

112. A more detailed report of the stakeholder dialogues was shared with the GEF Secretariat and subsequently discussed during a virtual meeting. The report is also part of Annex 6 Stakeholder Engagement Plan.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body;

Executor or co-executor; Yes

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assessment.

113. UNIDO and IISD recognize that gender equality and the empowerment of women (GEEW) have a significant positive impact on sustained economic growth and inclusive industrial development, which are key drivers of poverty alleviation and social progress. To achieve maximum impact and contribute to GEEW on the ground, UNIDO and IISD put especial emphasis on capturing opportunities to mainstream gender in their projects and programmes in line with UNIDO's Policy on Gender Equality and the Empowerment of Women, adopted in 2009 and revised in 2015 and 2019, UNIDO's Gender Equality and Empowerment of Women Strategy 2020-2023, as well as with the Lima Declaration adopted in 2013 and the Sustainable Development Goal (SDG) 5: Gender Equality.
114. Mal adaptation to climate change impacts women the hardest. There are many reasons for this including poverty, inadequate education, gender-bound patterns in the division of labour, entrenched cultural practices and even biological differences in heat sensitivity and resistance to extreme weather. The increased use of NBI can reduce some of these vulnerabilities. For one, women can be more open to trying out nature-based solutions as their traditional and indigenous knowledge can increase trust and confidence in the performance of nature. Gender literature also indicates that women are more easily persuaded to learn and start innovative approaches that build on traditional knowledge. They are therefore more willing participants in ecosystem-based approaches to climate adaption.
115. Women are also likely to better recognise that NBI is restorative and regenerative by design. They are first to gain from the co-benefits of NBI such as water purification, water storage, the preservation of soil and the diversification of livelihoods through harvesting. As Nature Based Infrastructure can be planned for long periods, 30 to 60 years, it provides the opportunity to implement transformative adaptation - strategies that address gender regimes related to the access, use and control over resources including land distribution, labour division and decision making power. Integrating NBI can increase opportunities for empowering women and training them for roles in conservation, sustainable harvesting and sustainable agriculture. Natural resource management is also an entry point for changing relations ? the proactive engagement with women changes power relations and increases joint decision making. This is indeed particularly important for climate resilience.
116. To integrate the gender dimension into the whole scope of project management; these steps may be distinct activities and will be incorporated into the different activity components of the project:
 - ? IISD's gender expert has conducted a gender analysis with recommendations (See Annex 7).

- ? All staff and experts involved by UNIDO and IISD into the implementation and execution of this project and contractors will be required to successfully complete the training/workshop on basic gender training (e.g. UN ?I know gender courses?
<https://trainingcentre.unwomen.org/portal/product/i-know-gender-1-2-3-gender-concepts-to-get-started-international-frameworks-for-gender-equality-and-promoting-gender-equality-throughout-the-un-system/>). When relevant, project staff and experts will have gender related tasks incorporated into their job descriptions.
- ? Gender aspects will be integral elements of the trainings in order to raise awareness and build capacity on gender issues.

117. For two core indicators of the project, gender disaggregated data will be collected and there are explicit targets for women direct beneficiaries and women benefiting from capacity building under the project:

Core Indicator 1: direct beneficiaries. We estimate a total number of 115,000 direct beneficiaries, of which 57,500 are women.

Core Indicator 4: total number of people trained. We estimate a total number of 2,340 people trained, of which 1,170 are women.

This also reflected in the Tracking tool CCA and explanatory note.

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Closing gender gaps in access to and control over natural resources; Yes

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project's results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

- 118. The rationale for NBI valuation is also to demonstrate to private investors, the cost effectiveness of using NBI in climate adaptation. More certainty and predictability on the adaptation potential of NBI is important to increase the confidence of private investors to crowd-in. As often expressed by industries wishing to engage in environmental stewardship approaches, private investors require comparable and verifiable information on the forecasted adaptation performance as well as on their financial and economic costs and benefits of NBI. They also require analyses that compare the performance of NBI to grey assets that provide the

same adaptation benefits. The NBI valuations conducted via this project will provide the much-needed due diligence for private capital participation in climate adaptation.

119. Private businesses, in particular those already engaged in environmental stewardship activities, are also likely to be stakeholders in the NBI projects that will be valued. Their views will then be included in the design of the simulation. Certainly, stakeholders that directly derive their business sustainability from the health and integrity of natural capital are well placed to participate in innovative conservation and finance solutions.
120. In January 2021 the Coca Cola Company and Coca Cola Hellenic as one of the major bottling companies presented the beta version of their new water stewardship policy to selected stakeholders. Under this policy the Coca Cola Company and Coca Cola Hellenic will also address water related climate change adaptation and the restoration of water provisioning and regulating ecosystem services. UNIDO informed the private sector representatives about the valuation services offered under the project ?Using systematic approaches and simulation to scale Nature Based Infrastructure for climate adaptation? and how proposals can be submitted for consideration by the Steering Committee. This was taken up with high interest by the Coca Cola representatives as well as by representatives of other beverage industries and considered to be a highly relevant and very valuable service.
121. UNIDO has just obtained OFP endorsement for the MSP ?Maintaining and Enhancing Water Yield through Land and Forest Rehabilitation (MEWLAFOR)? in Indonesia. Under this project private sector initiated nature based solutions to address land degradation induced water scarcity will be up-scaled. This project goes back to the cooperation UNIDO has with the HEINEKEN beverage industry to promote public private partnerships on water stewardship. This project will be put forward for the consideration by the PSC to create awareness amongst Indonesian policy makers on the cost efficiency of nature based solutions to effectively address land degradation , water scarcity and to adopt to climate change induced loss of eco-system services.
122. The International Dredging Association, as well as private sector companies active in the dredging industry have also expressed continued interest in NBI valuations for their NBI projects.
123. Given the strong interest expressed by the private sector period IISD and UNIDO will continue throughout the project implementation to make use of similar opportunities to disseminate information on the support offered under the proposed project to partners in the private and public sector.

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Risk	Rating	Mitigation
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<p>Stakeholder risks:</p> <p>Insufficient outreach and communication</p> <p>The global development community are not developing the NBI skills fast enough.</p> <p>Delays in interacting with project stakeholders to design the analysis and obtaining minimum level of project specific-data to provide a credible valuation.</p>	<p>L</p>	<p>The proposal includes a dedicated component on outreach and communication. A communication and outreach strategy will be developed during the Inception Phase of the project.</p> <p>Components 2 (data management and dissemination) and components 3 (capacity building) of this proposal are expressly designed to mitigate this risk.</p> <p>The Project Section Matrix includes a criterion that will evaluate the data availability, as well as the capacity of a project stakeholder to engage in the NBI valuation workflow. The online database, developed under component 2 of the project, will serve to develop proxies/assumptions to fill data gaps.</p>
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<p>Climate Change risks and opportunities:</p> <p>The impact of climate change becomes more and more evident. The costs and damages caused by climate change induced extreme weather events are steadily increasing as extreme weather events become more frequent and more intense.</p> <p>Humanity is becoming increasingly aware that we will have to adapt to climate change. While climate change has a negative impact on the global economy, climate change does also negatively impact ecosystems and their ability to provide valuable eco-system services</p>	<p>M</p>	<p>The economic impacts of climate change on the economy constitute a risk that countries might not be able to invest in the necessary adaptation measures; particularly if their mindset is limited to making investments in grey infrastructure. Therefore, it becomes increasingly important that alternative and more cost-effective adaptation measures, beyond investments in grey infrastructure will be mainstreamed. The climate change induced loss of ecosystem services also constitutes an opportunity. Unfortunately, mankind only starts to attribute a higher economic value (i.e., the willingness to pay for an ecosystem service or not to lose it) to these ecosystem services once they are becoming scarce and when it becomes evident how much the loss of regulating ecosystem services costs individuals and societies. This momentum can be used by the project to demonstrate that nature-based infrastructure can be a less costly adaption option than investments in conventional grey infrastructure. Furthermore, humanity only now has started to allocate a higher scarcity value to the positive externalities nature-based infrastructure solution do provide, when we see them endangered and disappearing. Thus, the more visible the impact of climate change becomes, the higher the demand for cost effective alternatives to grey infrastructure adaptation measures will become and the higher the economic (scarcity) value of the positive externalities and additional ecosystem services provided by NBI will be perceived. Here the project can contribute to the awareness of the financial and economic benefits of ecosystem services as it will be required for a mainstreaming of NBI as a cost effective and economically beneficial solutions for the unavoidable investments that will have to be made in climate change adaptation at a global scale.</p> <p>Finally, existing risks to nature-based solutions will be taken into account during project selection scrutiny. For more information on Project Selection Protocol please refer to Annex 2.</p>
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<p>COVID-19 risks and opportunities</p> <p>The outbreak of the global COVID-19 pandemics will have multiple repercussions on the implementation/execution of this project:</p> <p>The impacts of COVID-19 make international travel for project execution and outreach difficult.</p> <p>The COVID-19 global economic downturn will diminish momentum on climate adaptation.</p> <p>Delays in the sourcing of NBI projects for valuation due to the COVID-19 pandemic.</p> <p>Nevertheless, the COVID-19 crisis can also provide opportunities:</p> <p>The post- COVID-19 recovery stimulus will increase public spending on infrastructure and climate change adaptation.</p>	<p>M</p>	<p>This can be mitigated to a large degree by working virtually. IISD routinely works electronically with partners and NBI proponents, using teleconference platforms and on-line tools to engage stakeholders, discuss priorities, co-design NBI valuations, share results and explore next steps.</p> <p>This project will demonstrate that adapting to extreme weather using cost-effective NBI is a pre-requisite for economic resilience and economic recovery. As NBI is likely to require lower capital expenditure, it becomes an even more attractive option during times of public budget stress.</p> <ul style="list-style-type: none"> •A first list with projects for valuation in year 1 has been compiled and shared with the GEF Secretariat. •Continued outreach has taken place after the PIF approval and NBI project proponents have reached out and expressed interest in a valuation during year 1 of the project. •A project selection protocol (annex 2) has been developed. •Engagement through the GEF, GCA, UNIDO, MAVA Foundation, IISD NAP Global Network will happen on a continued basis to identify potential projects. •The NBI Resource Center will provide the possibility for any NBI project proponent to submit a request for a valuation online. <p>This will provide a unique opportunity to showcase the benefits of the p nature-based solutions, which will allow the cost effective adaptation to climate change, restore ecological functionality and provisioning and regulating eco-system services. This will increase the resilience of ecological and socio-economic systems to climate change as well as to potential future pandemics. Creating awareness on the better financial performance of nature-based solutions and the economic value of the positive externalities and ecosystem services provided will not only contribute to mainstream nature based solutions but will also contribute to a green recovery.</p>
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Environmental and social safeguard-related risks	L	Environmental and social safeguard-related risks are not likely to be relevant in the context of this project as it is not an investment. According to the UNIDO Environmental and Social Safeguards Policy and Procedures (ESSPP), the proposed project is likely to have minimal or no adverse social and/or environmental impacts. No further specific environmental and/or social assessment were required during Project Formulation, although those with procurement components may still have potential environmental and social sustainability considerations. These will be addressed through UNIDO's and IISD procurement processes, as applicable.
[Rating: L = Low Risk; M = Medium Risk; H= High Risk]		

124. An environmental and social risk screening was conducted according to the UNIDO Environmental and Social Safeguards Policies and Procedures (AI/2017/04). The screening categorized the project as 'C'. Category C projects are likely to have no adverse impacts on human populations or environmentally important areas.

6. Institutional Arrangement and Coordination

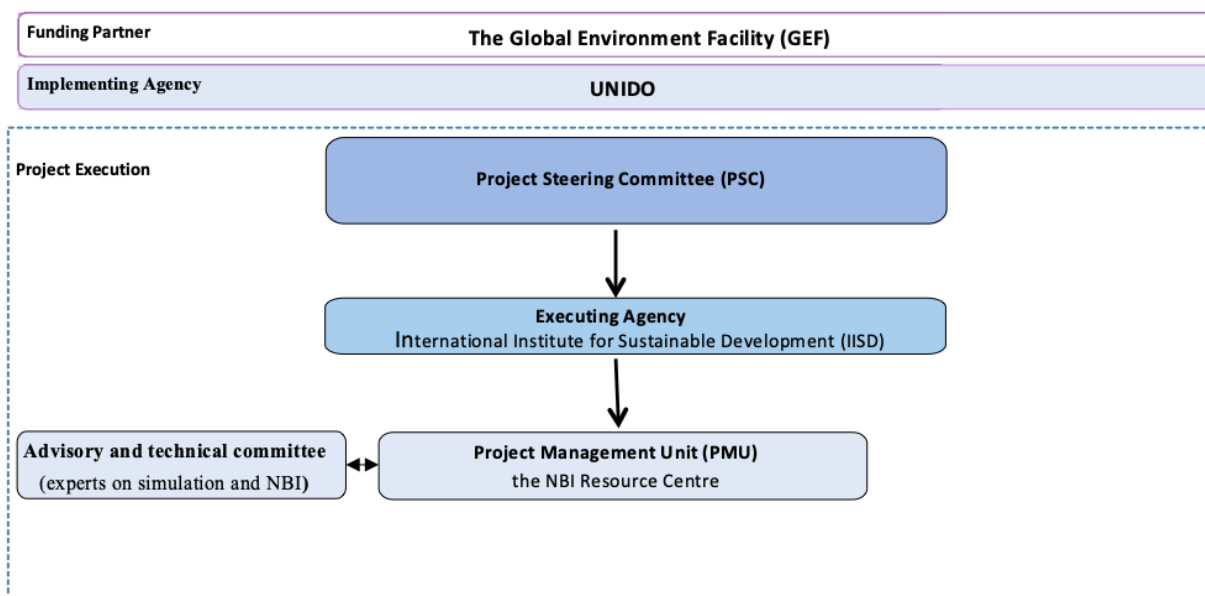
Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

Coordination on project execution

125. The project will be implemented by UNIDO as GEF Agency. Execution will be carried out by the International Institute of Sustainable Development (IISD), through a Project Execution Agreement (PEA) and based on an agreed upon Terms of Reference and policies, further to the identification process conducted during the PPG phase.
126. This will allow the project to benefit from the complementary comparative advantages of both organizations.
127. UNIDO as the Executing Agency is the UN agency with the mandate to promote Inclusive and Sustainable Development (IISD) and thus has the comparative advantage to work with private sector entities. Faced with the impacts of climate change the more advanced industries have realized that their active engagement as an environmental steward in public private partnerships will be required to guarantee their business sustainability and the sustainable provision of ecosystem services to people, nature and businesses. In each of the participatory bottom-up planning workshops UNIDO has moderated (e.g., under the partnership with the HEINEKEN beverage industry to promote public private sector cooperation on water stewardship in Algeria, Ethiopia, Indonesia and Nigeria) representatives from government, civil society, academia and the private sector identified nature-based solutions and nature-based infrastructure as a priority action for climate change adaptation and to maintain/restore ecosystem services. In this process, the stakeholders regularly demanded for an easily applicable methodology and assistance to compare the financial costs of NBI with conventional grey infrastructure solutions and to determine the monetary value of the positive externalities provided by nature-based solutions.
128. The International Institute for Sustainable Development (IISD) as the designated Project Executing Entity has also worked with the above-mentioned stakeholders during project identification. IISD is a well established think-tank with a track record of delivering successful projects of commensurate size for various donors. Established in 1990 and headquartered in

Winnipeg, IISD has two additional branch offices in Canada, in addition to offices in New York, Beijing and Geneva. IISD can draw from over 10 years of experience in the provision of technical and advisory services on sustainable infrastructure and over 4 years of the proposed methodology, which has been developed by IISD with the financial support by various donors. Following preliminary conceptual meetings with GEF SEC and MAVFA on the proposed project, IISD consulted with cities networks, urban resilience officers and infrastructure planners in V20 countries. The stakeholders expressed a high level of demand for the financial and economic valuation assistance that will be provided under this project. The project design draws from all these inputs that stressed the importance of strengthening expertise and the use of simulation and valuation to mainstream NBI in climate adaptation.

129. During the PPG phase UNIDO Procurement conducted an institutional capacity assessment of IISD and assessed IISD's compliance with the GEF Fiduciary Standards. IISD was assessed in October 2018 by the consulting firm Mannion Daniel Ltd. UK. This assessment was commissioned by DFID and classified IISD as an entity that can execute projects funded by international organisations. The risk assessment was aligned with the DFID Smart Guide methodology, which considers 4 broad 'pillars' covering: Governance and Internal Control, Financial Sustainability, Ability to Deliver and Downstream Delivery. The assessment included document reviews as well as interviews.
130. The overall risk rating for IISD was moderate. The recommendations of the assessment included further development and update of policies related to procurement, finance and human resources. IISD has actioned all the recommendations identified in the report and as clarified and evidences (copies of the policies) were provided. In summary, all the policies, guidelines and procedures are in place to consider IISD as compliant with the GEF Fiduciary Standards. Thus, UNIDO can engage with IISD under this project and eventually engage IISD as a project executing entity through a Project Execution Agreement (PEA). The PEA will be concluded between UNIDO and IISD based on the TORs provided in Annex 5.
131. The NBI resource centre (to be established by IISD) will serve as the project management unit. Thus, it will be staffed with subject matter experts as required to carry out the valuations, provide advisory services and take charge of advocacy work as well as with project management experts from IISD as required for close cooperation with the designated UNIDO project manager to ensure smooth coordination and management of the project. In order to assure cross-fertilization with other initiatives in the field of NBI and simulation the NBI resource center will consult and exchange on all subject matter issues with the technical advisory committee. It will consult regarding operational and institutional matters with the project steering committee.
132. The project will be guided by a project steering committee (PSC) which will include representatives from the GEF, IISD, MAVFA Foundation, UNIDO, and GCA. A technical advisory committee (TSC) will provide technical and strategic input on the different components of the project. TORs of the committees can be found in annexes 3 and 4. The PSC will be chaired on a rotational basis (for one year). The chair will be appointed by consensus. As executing agency, IISD will not chair the PSC. The representation of the respective organisations is as follows: GEF Secretariat: Manager Special Climate Change Fund; MAVFA Foundation: Director Sustainable Economies; UNIDO: Management level staff; IISD: Executive Director IISD Europe;
133. The TORs have also been reviewed and discussed with the GEF Secretariat during the PPG Phase.
134. The NBI Resource Centre will also work to improve the enabling environment for NBI outside the scope and beyond the duration of this project. A business plan for the NBI resource center can be found in annex 8.
135. The NBI Resource centre will also coordinate implementation and ensure outreach and collaboration across the networks of the GCA, UNIDO the MAVFA Foundation Networks, the GEF Networks, the IISD NAP Global Network, as part of component 4 of the project. An outreach and communication strategy will be developed at the start of the project.
136. The structure of the project implementation arrangement is shown in the following illustration:

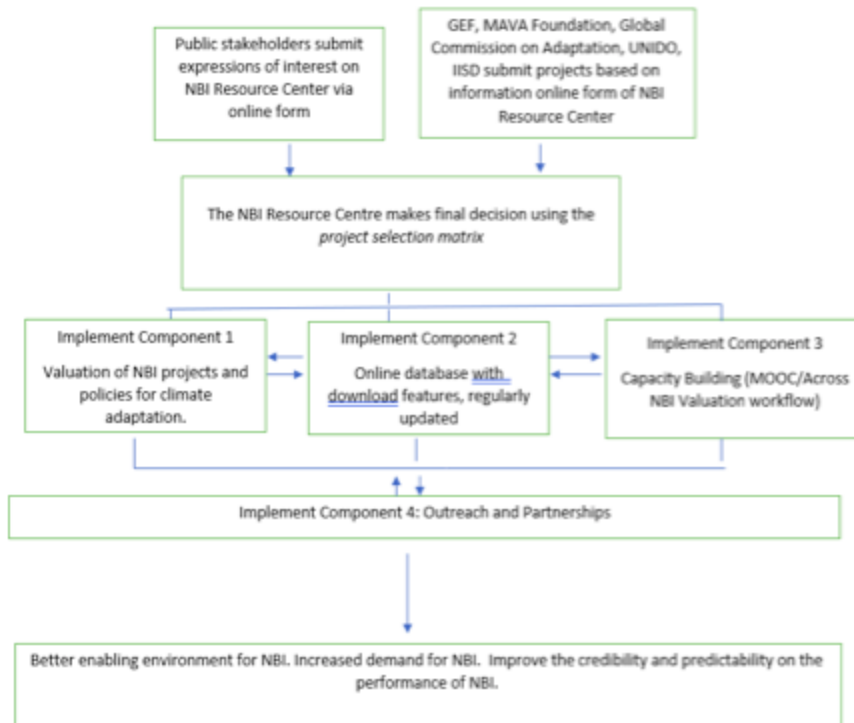


Coordination across the project components 1, 2, 3 and 4:

137. The NBI valuations in component 1, will be derived from project specific information and moreover from ongoing research and data synthesis. This body of knowledge and data will grow incrementally as the NBI valuations are conducted and the ongoing research continues. This data will be catalogued online and disseminated under component 2. Component 3, the MOOC, will draw from the learning and data in components 1 and 2 and will be updated every 12 months. Components 4, outreach and partnerships, will communicate the results and deliverables of the project, seek collaborations and feed into a range of ongoing initiatives on NBI. Please see the flow diagram below on the organisation of the project, across the 4 components.

USING SYSTEMIC APPROACHES AND SIMULATION TO SCALE NATURE-BASED INFRASTRUCTURE FOR CLIMATE ADAPTATION

How the NBI Resource Center will implement the project across components 1, 2, 3 and 4



Coordination with GEF, MAWA Foundation, UNIDO, GCA on sourcing of NBI projects:

138. This project will liaise and source NBI projects from the GEF Global Platform for Sustainable Cities and other GEF initiatives. The project will also liaise, source projects, and disseminate outputs through the networks of the GCA, which have identified nature and infrastructure as action tracks. This project will also liaise with the IISD National Adaptation Plan (NAP) Global Network and disseminate deliverables and outputs across IISD's extensive global networks.

Liaising and exchanging with Horizon2020 / Horizon Europe

139. The project will liaise and exchange experience with EU Horizon2020 / Horizon Europe projects that focus on Nature Based Infrastructure and climate adaptation. Part of this EU funding framework targets nature-based solutions as part of its Research & Innovation Policy Agenda. Examples of such projects include ThinkNature, Naturvation, Green Surge, UrbanGreenUP, GrowGreen, NAIAD, Nature4Cities, ConnectingNature and UrbanNature Labs.

Liaising with Global Networks:

140. Other projects and networks that will be targeted in project sourcing, dissemination and outreach include: Local Governments for Sustainability (ICLEI), the Green Climate Fund (GCF), the UN One

Planet Network, the UN Environment Sustainable Infrastructure Partnership; the Green Growth Knowledge Platform, the OECE Working Party on Procurement and Infrastructure, the C40 cities network, Wetlands International, the UN Global Compact, WWF country offices such as WWF South Africa that focus on Nature Based Infrastructure. We will also liaise with conversation finance and impact investment networks to disseminate project results. Of relevance are the Global Impact Investment Network, the Conservation Finance Network, and the Conservation Finance Alliance.

Liaising with simulation experts and networks:

141. This project will liaise with international experts and networks related to systems dynamics and project finance simulation. This is important to disseminate results, exchange best practice and moreover, to ensure continuous innovation on the simulation models being used to provide the NBI valuations. Of importance of the international Systems Dynamics Society, and the project finance best practice Corality Smart and F1F9.

Coordination with other GEF projects

142. The project will liaise with other GEF projects such as the IW:LEARN project and e.g. the ?Maintaining and Enhancing Water Yield through Land and Forest Rehabilitation (MEWLAFOR)? LD project. Through sourcing projects for NBI Valuations, there will be more exchanges with other GEF projects. The project will also establish linkages with other relevant UNIDO adaptation projects, e.g. GEF ID 10680 ?Promotion of climate adaptation technology and business model innovations and entrepreneurship in Sierra Leone?

Coordination with other GEF agencies

143. As discussed and agreed with GEFSEC during the intensive consultation process during the PPG phase the project will also make specially dedicated efforts that will be supported by GEFSEC to reach out to other GEF agencies and to inform them about the support that can be offered under this project. This will facilitate the mainstreaming of NBI solutions throughout and beyond the GEF portfolio of climate change adaption projects to other focal areas. Here the GEFSEC has identified particular relevance for the Sustainable Cities Impact Program.

144. Legal Context

?It is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient country concerned and UNIDO or ? in the absence of such an agreement ? by one of the following: (i) the Standard Basic Assistance Agreement concluded between the recipient country and UNDP, (ii) the Technical Assistance Agreements concluded between the recipient country and the United Nations and specialized agencies, or (iii) the Basic Terms and Conditions Governing UNIDO Projects.?

145. Transfer of assets

Full or partial ownership of equipment/assets purchased under the project may be transferred to national counterparts and/or project beneficiaries during the project implementation as deemed appropriate by the government counterpart in consultation with the UNIDO Project Manager.

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

146. Countries are increasing NBI as key component of their adaptation plans and strategies. The project will directly inform several sectoral planning processes, including for infrastructure that could be complemented or replaced by nature-based solutions. This is of particular relevance in the case of agriculture, water, urban development as well as cross-sectoral national development plans.
147. National priorities are many and varied. Economic growth, employment creation and emission reduction are targets found in most national development plans. On the other hand, actions to achieve stated targets in these three areas are not mutually reinforcing. E.g. the intervention options used to stimulate economic growth often lead to an increase of emissions. Even more trade-offs are found when the list of Key Performance Indicators (KPIs) is extended to additional social, economic and environmental outcomes.
148. For the 46 NBI project valuations, we will review national and sectoral development plans, as well as national commitments towards UN Conventions and other strategies and action plans as per the table below. The rationale for the project, and its narrative, will be based on existing development targets.
149. Further, since the models will be co-created and customized to the local context, indicators will be included to estimate the contribution that the NBI project will provide to reaching stated national and sub-national targets. This implies that the project will quantify the contribution of NBI to development, considering (i) social, economic and environmental, as well as (ii) direct, indirect and induced project outcomes.

National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC	Through the work of the NAP Global Network, IISD has already compiled an overview of the NAPAs that refer to or include NBI for climate adaptation. We will draw from this work to ensure that the NBI valuations strengthen the NAPAs.
National Action Program under UNCCD	NBI valuations will contribute to strengthening the National Action Programs under the UNCCD. Restoring ecosystems and combating land degradation are part of the NBI valuations that this project will offer.
National Biodiversity Strategies and Action Plan under the UNCBD	NBI valuations will strengthen and align with National Biodiversity Strategies and Action Plans. The existing targets will serve as input for the NBI models.

150. The IISD National Adaptation Plan (NAP) Network, that works with 140 countries informs us that countries are starting to include Nature Based Infrastructure as an adaptation strategy, but the

challenge lies in the lack of expertise to plan, predict, budget and eventually execute NBI solutions. Further evidence is that focus on NBI is increasing comes from the GCA, that has Nature Based Infrastructure as an action track. E.g. Viet Nam has sought support from the German Ministry for the Environment, Nature Conservation and Nuclear Security for the implementation of Viet Nam's adaptation targets in its NDC in the area of nature-based solutions (NBS) and ecosystem-based adaptation (EbA).

151. The global leadership provided by the EU on nature and climate is also important to note, as it will be advance the agenda on NBI. Of particular note is the Horizon Europe grant framework which includes cities and grantees outside the EU. The framework includes a strong focus on nature-based solutions as well as 're-naturing' cities. Another EU policy that will influence NBI for climate adaptation at the global level is EU Action plan for resilience in crisis prone countries which includes countries outside the EU. Broader leadership through the EU biodiversity strategy and the EU Green Deal will also drive global interest and demand for NBI. During the PPG phase, IISD has explored collaboration with three Horizon 2020 consortia to further work on the demand and evidence base for NBI. IISD is member of the EU Taskforce 3 on NBS that works on the business case for NBI.
152. The China Council for International Cooperation on Environment and Development (CCICED) established a special subgroup to work on Nature-based solutions and will work will be to provide research findings and recommendations to the Ministry of Ecology and Environment, other relevant Ministries, and the State Council. IISD is member of the subgroup and will share the outputs of this project with this platform.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

153. The project is designed to continuously improve generating, recording, sustaining and improving knowledge across the 4 components. The NBI valuations (component 1) will feed into the NBI database (component 2) and the design/updating of capacity building activities and materials (component 3). Outreach and Partnerships (component 4) will disseminate knowledge and generate demand for new valuations (component 1).
154. The dissemination of knowledge will happen through the NBI Resource Center, where all publications and outreach material will be hosted. Regular newsletters will also go out from the NBI Resource Center. Dissemination of knowledge also happens across the NBI valuation workflow as each valuation will draw from the knowledge and data generated throughout the project.
155. Component 1: Generation and recording information/knowledge will be ensured using templates and the publication of results including data, assumptions and simulation models. Sustaining knowledge and improving knowledge will occur organically, as learning from one valuation will inform and improve others. Improving knowledge will hence increase across the project life. Engagement with stakeholders in component 1 contributes to both the generation as well as the dissemination of knowledge created in this project.

156. Component 2: Generating and recording knowledge and sustaining knowledge will take place as intelligence from component 1 are recorded the public database. As the database expands and stakeholders begin to use it, knowledge will improve.
157. Component 3: Generating and recording knowledge and moreover the sustaining of knowledge will occur as intelligence from components 1 and 2 are used to develop capacity building materials and conduct capacity building activities. Improving knowledge will occur as decisions makers learn how to identify, plan and work on preliminary valuations.
158. Component 4. Sustaining knowledge will be core as intelligence and outputs of components 1, 2 and 3 will be used for outreach, dissemination and build new partnerships. Improving knowledge will happened as feedback from the wider development community will feed into the continued improvement of component 1 and subsequently 2 and 3. The NBI Resource Center will coordinate and disseminate the knowledge generated under the different components. A dedicated communication and dissemination strategy will be developed for the NBI Resource Center at the start of the project. The NBI Resource Center will also publish a yearly impact report.
159. The project and the NBI valuation services will also be presented at various conferences, to disseminate knowledge and to source more projects for NBI valuations. The project will be presented at the GEF IW:Learn biannual conference and at the Climate Adaptation Summit.

9. Monitoring and Evaluation

Describe the budgeted M and E plan

160. As the Executing Agency IISD will assure the regular monitoring of project progress as a part of the project management activities . Within 3 months of project launch IISD will organize the Project Inception Workshop, which will also constitute the first meeting of the Project Steering Committee (PSC). Furthermore, 9 PSC meetings will be organized. In between the meetings of the Project Steering Committee IISD and UNIDO will keep regular contact through bi-monthly calls in which progress in project implementation will be assessed and discussed and in case required adaptive management measures will be agreed upon. In the Steering Committee Meetings as well as through the PIRs UNIDO will formally report the inputs provided by IISD on progress in project execution, challenges encountered and corrective measures taken to GEFSEC. As the Implementing Agency UNIDO will furthermore facilitate a mid term review and an independent terminal evaluation. For this purpose a budget of U\$ 46,998 has been allocated.

M&E Activity	Timeframe	GEF Budget (USD)	UNIDO in-kind co-financing (USD)	IISD in-kind co-financing (USD)	Responsible Parties
Project Inception/1 SCM	first 3 months after implementation start	1,000	1,000	1,500	IISD

Project SCM meetings (9)	Every six months	9,000	9,000	13,500	IISD
GEF PIR	yearly	7,000	9,000	9,000	IISD
Mid-term review	at 2,5 years	23,499	10,000	20,000	External reviewer, submission to UNIDO
Independent terminal evaluation	started six months prior to the expected completion date of the project	23,499	10,000	20,000	External evaluator, submission to UNIDO
Total		63,998	39,000	64,000	

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCE/SCCF)?

161. The entry point for Nature Based Infrastructure (NBI) in most cases is natural resource management with the goal to improve provisioning and regulating ecosystem services and to provide a cost-effective solution for climate adaptation.
162. By using systems thinking and simulation and taking a systemic approach throughout the project, we will support the mainstreaming of adaptation and resilience for systemic impact by 1) increasing land area managed for climate resilience, 2) directly affect people living in and around NBI projects, 3) mainstream climate resilience in development plans and policies and 4) training people on systemic approaches for scaling up the use of NBI for climate adaptation will foster enabling conditions for effective and integrated climate change adaptation. Training for NBI proponents and stakeholders will occur throughout the NBI valuation workflow (see annex 5 for more detail) and a MOOC for training a wider audience of policy makers, infrastructure planners and investors.
163. Thus, by promoting Nature Based Solutions for climate change adaptation the project will provide socio-economic benefits in all those locations, where Nature Based Solutions will be implemented. Demonstrating the financial and economic superiority of Nature Based Solutions the project will showcase how vulnerability can be reduced and resilience can be increased at lower costs than applying conventional grey infrastructure solutions. The socio economic benefits from maintaining and/or restoring critical ecosystem services will be range from damages/costs avoided, to maintaining provisioning and regulating services as well as from the provisions of complementary ecosystem services like recreation and amenity. Furthermore, through the positive externalities provided by Nature Based Solutions (e.g. the sequestration of CO₂ from the

atmosphere) and through the massive efforts geared at awareness creation and know-how transfer efforts the project will also generate global environmental benefits, mainstream Nature Based Solutions for climate change adaptation and foster enabling condition for cost effective, economically beneficial and integrated nature based climate change adaptation.

164. The specific targets for each of these indicators are provided in the Tracking tool (excel), with further explanation in the explanatory note.

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
Low	Low		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

A preliminary environmental and social risk screening was conducted according to the UNIDO Environmental and Social Safeguards Policies and Procedures (AI/2017/04). The screening categorized the project as 'C'. Category C projects are likely to have no adverse impacts on human populations or environmentally important areas.

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex D - ES Screening_Template_200172_countersigned	Project PIF ESS	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Please refer to Annex A. Logframe uploaded under the project's roadmap.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Responses to project reviews can be found in Annex B under the project's roadmap.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG).
(Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: 50,000			
<i>Project Preparation Activities Implemented</i>	<i>GETF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Recruit an international expert to prepare the CEO endorsement document	30,000	30,000	0
Recruit an international expert to support IISD in the development of the gender assessment and mainstreaming strategy	10,000	10,000	0
Stakeholder engagement	10,000	5,000	5,000
Total	50,000	45,000	5,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/CBIT Trust Funds or to your Agency (and/or revolving fund that will be set up)

ANNEX E: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

This project is open to NBI proponents from all countries of the world including but not limited to the networks of the GEF, GCA, UNIDO and IISD. It is expected that a majority of the NBI proposals will address adaptation issues in the countries most vulnerable to climate change.



The areas in red, including most of Africa and South Asia, are very vulnerable to climate change and ill-prepared to deal with its impact. The few countries in blue, including Vietnam, Ghana, Rwanda, Namibia and Botswana, are countries that are vulnerable but are relatively well equipped. Countries in yellow are less vulnerable but also less prepared. The countries in green, which include most of the world's developed countries, are both less vulnerable and better equipped to deal with the challenge of climate change.

ANNEX F: Project Budget Table

Please attach a project budget table.

Please refer to Annex F. GEF Budget uploaded under the project's roadmap.