

GEF-8 REQUEST FOR MSP (1-STEP) APPROVAL

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General Project Information

Project Information

Project Title:

Nature for Cooling Challenge (NCC)

Region:

Global

GEF Project ID:

11960

Country(ies):

Global

Brazil

Cambodia

Cote d'Ivoire

Type of Project:

MSP

GEF Agency(ies):

UNEP

GEF Agency Project ID:

Project Executing Entity(s):

United Nations Environment Programme (UNEP) - Cool Coalition

Project Executing Type:

GEF Agency

GEF Focal Area (s):

Climate Change

Submission Date:

6/26/2025

Type of Trust Fund:

GET

Project Duration (Months):

36

GEF Project Grant: (a)

3,000,000.00

GEF Project Non-Grant: (b)

0.00

Agency Fee(s) Grant: (c)

285,000.00

Agency Fee(s) Non-Grant (d)

0.00

Total GEF Financing: (a+b+c+d)

3,285,000.00

Total Co-financing

30,670,000.00

PPG Amount: (e)

50,000.00

PPG Agency Fee(s): (f)

4,750.00

PPG total amount: (e+f)

54,750.00

Total GEF Resources: (a+b+c+d+e+f)

3,339,750.00

Project Tags

CBIT: No NGI: No SGP: No Innovation: No Competitive Window: No

Project Sector (CCM Only):

Mixed & Others

Taxonomy:

Climate Change Mitigation, Climate Change, Focal Areas

Rio Markers

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Principal Objective 2	Significant Objective 1	No Contribution 0	No Contribution 0

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? (iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B “project description”. (max. 250 words, approximately 1/2 page)

Global greenhouse gas emissions are reaching record highs – 57.1 GtCO₂e in 2023 (UNEP, 2024) – driving a rapidly rising demand for cooling, particularly in urban areas, where urban heat exposure is high, energy pressures are mounting, and access to sustainable cooling solutions remains inequitable. To address this, the project will identify and support the implementation of innovative cooling solutions that leverage nature to reduce cooling and energy demand through a challenge-based approach, while building the business case for private sector engagement and collaborating with national and subnational government actors to ensure policy alignment and replicability. Component 1 will strengthen global partnerships, particularly through the Cool Coalition, to lay the foundation for scaling up NbS for cooling. Component 2 will provide technical assistance and capacity building to professionals and government agencies for effective NbS integration. Component 3 will support investment in innovative NbS for cooling to advance piloting, design, and preparation of solutions. Component 4 will lay out the foundation for national governments to enable the adoption and implementation of policies and frameworks that support NbS for cooling. The expected results include enhanced capacity of building professionals and government agencies, demonstration and scaling of effective NbS for cooling with private sector participation, and expansion of data and tools to support evidence-based, sustainable, and replicable cooling strategies. The impact and results of this project will be widely shared through the existing networks of the Cool Coalition and the GEF Sustainable Cities Impact Programme, within the ongoing global coordination programmes of GEF-7 (UrbanShift) and GEF-8 (Global Platform for Sustainable Cities). These efforts will also identify gaps and lay the foundation for potential scale-up under up-coming funding cycles. The project aims to directly benefit 620 people and indirectly influence up to 24 cities, with an estimated total mitigation of 736,640 tCO₂e over 20 years.

Project Description Overview

Project Objective

Accelerate the adoption, scale-up, and investment in Nature-based Solutions (NbS) for cooling and addressing extreme heat.

Project Components

Component 1. Global partnerships and knowledge

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
489,430.00	4,615,000.00

Outcome:

Outcome 1: Enhanced public-private engagement in the Cool Coalition Nature for Cooling working group (NCWG) leads to increased knowledge and understanding of NbS for cooling and addressing extreme heat at the global, national, and local level

Output:

1.1. Partnerships: Government officials, private sector actors, and civil society gain increased opportunities for structured engagement, coordination, and knowledge exchange on NbS for cooling and addressing extreme heat

1.2 Knowledge co-development: Tools and training materials for supporting the scale-up implementation of NbS for cooling projects are shared through the NCWG with countries, local actors and key support organizations.

1.3 Awareness and ambition raising: Government officials, private sector actors and civil society have improved access to knowledge and international platforms that promotes greater ambition and scaled-up action on NbS for cooling and addressing extreme heat.

Component 2. Technical assistance and capacity building

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
307,679.00	3,295,000.00

Outcome:

Outcome 2 (i): Private developers and public institutions engage in the Nature for Cooling Challenge, adopting NbS for cooling in their projects and demonstrating measurable changes in practices to address extreme heat.

Outcome 2 (ii): In the three challenge countries, the 12 winning proponents take steps to promote an enabling environment for scale-up of and drive increased investment in NbS for cooling and addressing extreme heat.

Output:

2.1. Challenge: The first “Nature for Cooling Challenge (NCC)” is launched, providing global and local stakeholders with opportunities to catalyze partnerships for accelerating the adoption, scale-up and investment in NbS for cooling and addressing extreme heat.

2.2 Select and Award: Countries whose project proposals on NbS for cooling and addressing extreme heat are selected have access to tailored support to enhance proposal feasibility and impact.

2.3 Training and Implementation Support: winning proponents gain experience in using rapid assessment tool, guidelines and knowledge to co-create inclusive, gender-responsive, and investment-ready NbS for cooling projects.

Component 3. Deep-dive implementation investment support

Component Type	Trust Fund
Investment	GET
GEF Project Financing (\$)	Co-financing (\$)
1,583,844.00	19,320,000.00

Outcome:

Outcome 3: Three (3) deep dive proponents advance the project design and preparation of NbS for cooling and addressing extreme heat, providing proof of concept for private sector engagement and the enabling regulatory environment needed for implementation.

Output:

3.1. Grants: Deep dive proponents have access to targeted grants functioning as catalytic investments to support the implementation of NbS for cooling projects.

3.2 Deep dive proponents: Deep dive proponents have access to design and procurement specifications for supporting projects to be tendered.

3.3 Monitoring and Reporting: a monitoring and reporting framework is adopted by deep-dive proponents for quantifying their proposal’s cooling effects, GHG emission reductions, and co-benefits for resilience and biodiversity.

3.4 Local Scaling: Local government officials have access to tailored recommendations to promote the integration of NbS into future design projects, including incentives for developers and for urban planning and building design.

Component 4. National enabling conditions

Component Type	Trust Fund
Technical Assistance	GET

GEF Project Financing (\$)	Co-financing (\$)
332,941.00	1,770,000.00

Outcome:

Outcome 4: National governments (Brazil, Cambodia and Cote d'Ivoire) take steps to adopt policies that encourage subnational governments, developers, design professionals, financial institutions, industry and civil society to implement NbS for cooling and addressing extreme heat

Output:

4.1 Multi-stakeholder platforms: multi-stakeholder platforms for promoting policy-coherence on NbS for cooling and addressing extreme heat are established to engage national government officials, civil society, private sector and financial institutions.

4.2 Procurement guidelines and policies: National governments have access to policy, procurement guidelines and a tool, and receive training on how to integrate NbS for cooling and addressing extreme heat in public procurement and planning.

4.3 Financial incentives dialogue: Policy makers in participating countries have access to tailored recommendations on financial incentives to promote NbS for cooling.

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing (\$)	Co-financing (\$)
146,506.00	270,000.00

Outcome:

Component 5. Monitoring and Reporting (M&E)

Output:

Output 5.1: Monitoring

Output 5.2: Reporting

Component Balances

Project Components	GEF Project Financing (\$)	Co-financing (\$)
Component 1. Global partnerships and knowledge	489,430.00	4,615,000.00
Component 2. Technical assistance and capacity building	307,679.00	3,295,000.00

Component 3. Deep-dive implementation investment support	1,583,844.00	19,320,000.00
Component 4. National enabling conditions	332,941.00	1,770,000.00
M&E	146,506.00	270,000.00
Subtotal	2,860,400.00	29,270,000.00
Project Management Cost	139,600.00	1,400,000.00
Total Project Cost (\$)	3,000,000.00	30,670,000.00

Please provide justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

A1. Global environmental problem

According to UNEP's Emissions Gap Report 2024 (UNEP, 2024), global greenhouse gas (GHG) emissions reached a new record high of 57.1 GtCO₂e in 2023, a 1.3% increase from 2022 levels. This rise surpasses the average annual growth rate of 0.8% observed from 2010 to 2019, with emissions increasing across all major sectors, including power generation, transport, industry, and agriculture. The power sector remains the largest contributor at 15.1 GtCO₂e, followed by transport (8.4 GtCO₂e), agriculture (6.5 GtCO₂e), and industry (6.5 GtCO₂e). If current trajectories continue, achieving the temperature goals of the Paris Agreement—limiting warming to well below 2°C and pursuing efforts to stay below 1.5°C—will become significantly more difficult. Due to insufficient reductions in high-income, high-emitting countries and uncontrolled emissions growth in low- and middle-income countries, unprecedented action is required from all nations to address this escalating crisis. Furthermore, the rapid rise in global temperatures driven by anthropogenic climate change, poses a significant global environmental challenge. Frequent and severe heat waves, as reported by UNEP's Emissions Gap Report 2023 (UNEP, 2023), included 86 days exceeding 1.5°C above pre-industrial levels, with September being the hottest month on record.

The built environment sector is by far the largest emitter of GHG, responsible for at least 37% of the global emissions (UNEP, 2023). Within the total share of emissions from building and construction, the majority (17%) are operational emissions from residential buildings, the emissions created from heating, cooling, lighting, and other appliances. Globally, space cooling accounts for 20% of building sector energy emissions and is the fastest growing driver of building energy demand and emissions. The electricity demand for space cooling has increased more than twice as fast as the overall trend in buildings over the last decade (IEA, 2023). According to UNEP's latest report Global Cooling Watch 2023 (UNEP, 2023), based on current policies, the installed capacity of cooling equipment globally will triple by 2050, more than doubling electricity consumption. This will lead emissions from cooling to surge to 6.1 billion tCO₂e in 2050 based on a business as

usual scenario, which would account for more than 10% of global projected emissions that year. Meeting this rising demand will require large investments in electricity generation and distribution infrastructure and will also result in higher electricity bills for end users, particularly in Africa and South Asia where the fastest growth in cooling demand is predicted. These regions have also been warming faster than the global average, further exacerbating the need for cooling solutions ([WHO, 2024](#)) ([WHO, 2024](#)).

In addition to climate change drivers, other factors such as increasing incomes and growing population, rapid urbanization, and the way cities are built exacerbate the risks of extreme heat. Urban areas, which are warming at twice the global average due to the Urban Heat Island Effect (UHIE), are particularly vulnerable. Currently, 815 million people lack access to sustainable cooling ([SEforALL, 2023](#)). The UHIE refers to the phenomenon where urban areas experience significantly higher temperatures than surrounding rural areas, driven by factors like dense buildings, limited green spaces, and human activities. This phenomenon is caused by dense concentrations of heat-absorbing surfaces like pavement and buildings, along with exhaust heat from human activities. As cities expand, temperatures in urban areas could rise by as much as 4°C by 2100, twice the rate of nearby rural regions ([L Zhao et al, 2021](#)). Vulnerable urban populations, particularly the 800 million urban poor across 77 high-impact countries^[1] and regions that are at high risk due to a lack of access to sustainable cooling, of which 61% are women ([SEforALL, 2023](#)). The lack of indoor cooling exacerbates risks of heat stress, compromising thermal comfort, labour productivity, and overall health. Additionally, urban expansion often encroaches on natural spaces, diminishing water security and green areas crucial for biodiversity preservation.

This is particularly evident in countries such as Brazil, Côte d'Ivoire, and Cambodia, where rapid urban expansion, rising energy demands, and inadequate urban planning intensify heat exposure, especially for vulnerable communities. Urban areas, due to the UHIE, experience significantly higher temperatures than surrounding rural areas.

For those with access to electricity and financial resources, active cooling systems like fans and air conditioners provide relief from high temperatures. However, these solutions have significant drawbacks, including increased carbon emissions from energy use, peak demand pressures on electricity systems, and exacerbation of the UHIE. The use of high-Global Warming Potential (GWP) refrigerants in cooling equipment further contributes to direct emissions. As the planet warms, ensuring equitable and sustainable cooling access is crucial to prevent exacerbating climate change. While improving electricity access and financial resources may increase cooling access for at-risk populations, it also risks accelerating climate change if not managed sustainably.

The proposed project emphasizes the importance of NbS for providing equitable and sustainable cooling. NbS, such as urban vegetation and water bodies, offer natural cooling by enhancing thermal comfort and reducing the need for energy-intensive cooling systems. These solutions can lower ambient temperatures by up to 12°C ([J Schwaab et al, 2021](#)), resulting in significant energy savings. For instance, Chicago's City Hall green roof project achieves cooling savings of approximately 9,270 kWh annually, with a cooling effect of up to 40°C compared to traditional concrete roofs ([US EPA, 2014](#)). NbS not only reduce carbon emissions but also promote public health, improve air and water quality ([SEforALL, 2021](#)), and support biodiversity. In Medellín, Colombia, the implementation of 'green corridors' reduced temperatures from 31.6°C to 27.1°C, while also providing employment and improving air quality. Studies in the United States suggest that a 1°C reduction in air temperature can decrease peak electricity demand for cooling by 2-4% ([D Burillo et al, 2019](#)). Urban forests also contribute significantly to carbon sequestration, with estimated benefits ranging from 9.1 to 18.8 tons of carbon per hectare per year for the first 20 years, potentially increasing thereafter ([World Bank, 2021](#)). These NbS strategies offer vital climate adaptation and mitigation benefits, making them a critical component of sustainable urban cooling solutions.

A2. Baseline scenario and associated baseline projects

The NCC addresses the global environmental challenge of rising emissions linked to increasing cooling demand by building on a diverse range of existing programmes, initiatives, and instruments. These efforts, outlined in Section A2, include international and national frameworks designed to curb emissions, supported by modelling tools, partnerships,

capacity-building initiatives, and finance programs. The NCC leverages these established efforts and stakeholder contributions to enhance its impact and scalability, focusing on innovative and practical solutions for sustainable cooling. By drawing on key partnerships and existing resources, the project aims to effectively address cooling challenges in priority regions while fostering global collaboration and investment.

The initial selection of countries for the Nature for Cooling Challenge (NCC) global initiative included Brazil, Cambodia and Côte d'Ivoire. It was guided by the need to maximize impact and scalability by focusing on countries with high cooling demands and significant CO₂ emissions, making them priority areas for sustainable cooling interventions. These countries also demonstrate a strong commitment to advancing cooling solutions, whether through formal endorsements of the Global Cooling Pledge or the implementation of national cooling strategies. Additionally, they offer favourable conditions for collaboration and co-financing through the presence of existing initiatives in NbS and urban cooling, which creates opportunities to build on ongoing efforts and leverage resources.

Brazil stands out as a pivotal player in the global climate agenda, not only due to its high cooling demand and CO₂ emissions, but also as the host of COP30, demonstrating leadership in climate change mitigation and NbS. As an endorser of the Global Cooling Pledge, Brazil has shown a strong commitment to advancing sustainable cooling practices. Additionally, the presence of existing initiatives in NbS and cooling creates valuable opportunities for collaboration and co-financing, building on ongoing efforts to scale up cooling solutions.

Cambodia has established itself as a regional leader in promoting passive cooling strategies and nature-based solutions as part of its climate and energy program. Through its NCAP and the "Passive Cooling Strategies for Sustainable Development" initiative, supported by UNEP and ESCAP through the Cool Coalition and GlobalABC, the country is creating an enabling policy framework to facilitate the design of energy efficient buildings to reduce cooling demand. Cambodia is incorporating passive cooling into its building codes and architectural design technical regulations, piloting demonstration projects, and promoting policies that encourage architectural shading, natural ventilation, cool roofs, and nature-based solutions. These efforts highlight Cambodia's strategy and leadership on passive cooling and NbS to mitigate and adapt to extreme heat.

Côte d'Ivoire was selected for its high vulnerability to heat stress, along with increasing cooling demand and CO₂ emissions, which make it a priority for resilient cooling strategies. The country's commitment to sustainable cooling practices is evidenced by its endorsement of the Global Cooling Pledge, reflecting a readiness to implement solutions at scale. Furthermore, existing projects and collaborations offer a solid foundation to leverage resources and enhance project feasibility, positioning Côte d'Ivoire as an influential partner in the NCC.

A.2.1. GEF Sustainable Cities Impact Programme

The GEF's Sustainable Cities Impact program adopts an integrated and systems-based approach for urban sustainability. It targets systemic barriers to advance sustainability solutions which include institutional, political, and financial constraints, uncoordinated urban policies, siloed land use planning, lack of knowledge and technical capacity, and limited engagement of stakeholders in decision-making. The Sustainable Cities program takes a holistic approach of strengthening urban governance and planning, supporting investments in innovative and impactful sustainability solutions, catalyze innovative financing and business models, and facilitate global collaboration and partnerships to shift from 'business as usual' path towards urban transformation.

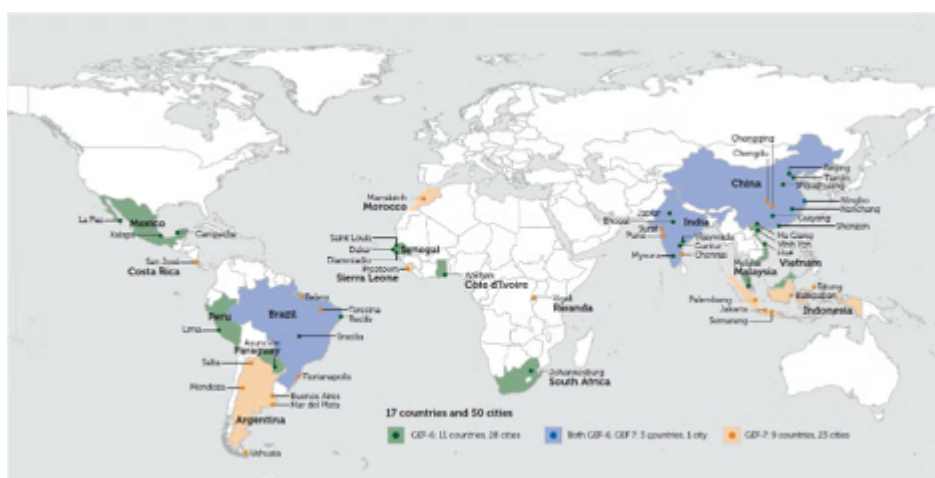
The objective of the Sustainable Cities program is to support cities in developing innovative sustainability solutions and strengthening institutional capacity to move towards a net zero carbon, nature positive, inclusive and resilient urban future. The program aims to deliver impactful development outcomes at large scale and with multiple global environmental benefits, through two interlinked components:

1. Country and city-level interventions with on-the-ground projects in participating cities, working together with city officials, urban actors and national governments to create innovative models for implementation of integrated sustainability solutions and investments in selected cities and countries.
2. A global platform and coordination project to connect participating cities with global expertise and cutting-edge research for integrated urban planning, city-to-city knowledge exchange, learning and sharing of best practices.

The SCIP was first launched as a pilot under the GEF-6 cycle (2014-2018) and has continued through GEF-7 (2019-2024) and GEF-8 (2025-2032). Across GEF-6 and GEF-7, the program engaged 50 cities in 17 countries (see Figure 1), supported by \$310 million in GEF grants and nearly \$4 billion in co-financing. SCIP aims to reduce over 250 million tons of greenhouse gas emissions, sustainably manage nearly 1 million hectares, and deliver climate resilience and socioeconomic benefits to vulnerable communities.

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Figure 1 - Countries participating in GEF-6 and GEF-7 Sustainable Cities Impact Programme



Building on this foundation, the GEF-8 SCIP—led by the World Bank—will expand participation and strengthen commitments on climate change, biodiversity, and the circular economy. The program seeks to position itself as a leading forum for urban sustainability by convening high-profile events, publishing flagship reports, and focusing on issues of global relevance. Through the Global Platform of Sustainable Cities, it will enhance knowledge sharing and learning

across projects, support the World Bank's Knowledge Compact and GPURL's Livable Cities Academy, and extend knowledge dissemination to non-GEF-8 cities, thereby amplifying impact and building momentum for future phases such as GEF-9. The GEF-8 SCIP has been allocated US\$17.5 million and is expected to run from 2025 through 2032.

Table 1 provides an overview of the SCIP from GEF-6 to GEF-8, focusing on activities related to nature-based solutions (NbS) and cooling. It shows that while earlier cycles laid an important foundation by promoting NbS in urban planning and demonstrating their role in mitigating extreme heat, their contribution to reducing energy demand for cooling remains underexplored. To date, no systematic tools exist to quantify this potential, nor have mechanisms been developed to effectively engage the private sector in scaling and implementing NbS in the pilot cities.

Table 1 - Overview of the coordination platforms of the SCIP, from GEF-6 to GEF-8

	GEF-6	GEF-7	GEF-8
Lead Agency	World Bank	UNEP	World Bank
Countries	China, Cote d'Ivoire, Brazil, India, South Africa, Malaysia, Paraguay, Mexico, Peru, Senegal, Viet Nam.	Argentina, Brazil, China, Costa Rica, India, Indonesia, Morocco, Rwanda, Sierra Leone	Algeria, Belize, Benin, Chile, China, Congo, Cuba, Gabon, Guatemala, Kenya, Madagascar, Malaysia, Mali, Mongolia, Peru, Philippines, Serbia, South Africa, Sri Lanka, Zimbabwe
Key activities on urban nature and cooling	- Contributed to and developed publications such as the Primer for Cool Cities: Reducing excessive urban heat, Urban Nature and Biodiversity for Cities. - Greening Cities is the theme of one of the focal areas of the knowledge resources that are collected and disseminated through the GPSC.	- Conducted outreach activities, including two webinars in collaboration with the Cool Coalition: one focused on extreme heat^[1], and the other on urban cooling^[2]. - Published an article^[3] analyzing innovative and successful experiences from Cape Town and Medellín in tackling extreme heat.	Two of its four thematic areas align with this project's focus on leveraging the potential of nature for cooling: Thematic Area 1 - Nature-Positive Urban Development (which will cover aspects of urban cooling), including, and the Thematic Area 2: Decarbonized Built Environment (see section B4.4. for potential synergies and collaboration)

Table 2 summarizes the activities undertaken by Child Projects in Brazil, and Côte d'Ivoire - countries that overlap with the beneficiary countries of this project - across different SCIP cycles, highlighting instances where interventions addressed urban nature and cooling. Cambodia has not participated in any of the SCIP.

Table 2 - Focus of child projects in Brazil and Cote d'Ivoire

GEF Cycle	Country	Focus
Brazil	GEF-6	- Implemented by UNEP between 2018 and 2023. - Pilot activities were carried out in Recife and Brasília. - Focused on integrating urban technologies with land use planning.

GEF-7		- Nature-based solutions were piloted to address soil and water pollution in Brasília, and a filtering garden was implemented along the banks of the Capibaribe River in Recife^[1]. - Implemented by UNEP since 2020² and executed by the Ministry of Science, Technology, and Innovation (MCTI) through the CITInova II project, in partnership with the Center for Management and Strategic Studies (CGEE), the Brazilian Biodiversity Fund (FUNBIO) and UNEP Brazil. - Pilot activities are carried out in Belém, Teresina and Florianópolis. - Pilot activities in Teresina and Florianópolis include NbS to reduce the urban heat island effect, including natural and low-emission cooling measures to help the cities lower GHG emissions from air conditioning.
Cote d'Ivoire	GEF-6	- Supported the Greater Abidjan Region Master Plan (Schéma Directeur de Grand Abidjan 2030). - Focused on improving urban mobility planning and management by promoting air quality through monitoring, the use of cleaner fuels, a younger vehicle fleet, improved engine technologies, and the enforcement of vehicle maintenance standards^[2].

[1] Terminal evaluation of the project <https://www.thegef.org/projects-operations/projects/9077>

[2] <https://www.thegpsc.org/city/abidjan>

A.2.2. International frameworks and plans aligned with reducing cooling associated emissions

The international community is intensively working on alternative initiatives to reduce cooling demand and GHG emissions due to the urgent need to combat climate change, improve energy efficiency, and support sustainable development. The incorporation of cooling solutions in buildings and city planning integrating passive measures to maintain lower indoor temperatures than conventional structures, demonstrate significant potential for reducing the need for mechanical cooling systems. Such interventions, not only lower energy consumption and emissions but also enhance resilience to climate change. This is particularly important in low-income and middle-income countries, where the costs of air conditioning or building refurbishments are often prohibitive.

Global agreements and protocols, such as the Paris Agreement and the Kigali Amendment, are essential in steering international efforts to combat climate change. These frameworks provide structured strategies for reducing GHG emissions and phasing out high-GWP refrigerants worldwide. Furthermore, international collaborations like the Global Cooling Pledge, the Cool Coalition, WRI, ICLEI, and C40 focus on mobilizing resources, sharing best practices, and implementing effective cooling solutions. Recognizing the varied national contexts, many of these initiatives encourage countries to develop tailored strategies for enhancing cooling efficiency, taking into account their unique baselines and capabilities. Table 3. summarizes the key frameworks and ongoing initiatives aimed at reducing GHG emissions through improved cooling solutions.

Table 3 - Globally relevant initiatives

Initiative	Organization/ initiative	Description
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Paris Agreement	United Nations Framework Convention on Climate Change (UNFCCC)	The Paris Agreement goal of limiting global temperature rise to well below 2°C, and aiming for 1.5°C, necessitates significant emission reductions from cooling activities. Internationally coordinated actions can save up to 78 billion tonnes of CO ₂ equivalent between now and 2050, improve the quality of life for hundreds of millions, and yield substantial financial savings.
Kigali Amendment to the Montreal Protocol	United Nations Environment Programme (UNEP)	The Kigali Amendment to the Montreal Protocol, which mandates the phasedown of hydrofluorocarbons (HFCs), is a key international effort in this direction, with the potential to prevent up to an estimated 0.5°C of warming by 2100.
Cool Coalition	United Nations Environment Programme (UNEP)	The Cool Coalition is a global multi-stakeholder network launched by the UNEP to promote efficient, climate-friendly cooling solutions worldwide. Its goals are to reduce the need for mechanical cooling through better urban planning and building design, shift cooling systems to renewable energy sources, improve the efficiency of conventional cooling technologies, and protect vulnerable populations from extreme heat and unreliable cold chains. The Coalition brings together governments, businesses, international organizations, and civil society to collaborate on science, policy, finance, and technology to meet the growing demand for cooling while reducing its environmental impact in line with the Sustainable Development Goals, the Kigali Amendment, and the Paris Climate Agreement. The list of Cool Coalition partners is available here .
Global Cooling Pledge	UAE COP28 Presidency/ United Nations Environment Programme (UNEP)	The Global Cooling Pledge, launched at COP28, is a global initiative to reduce GHG emissions from cooling across all sectors by at least 68% by 2050, in line with the goal of limiting global temperature increase to 1.5°C. The Pledge promotes sustainable cooling practices, including the transition to low-GWP refrigerants, increased efficiency of cooling technologies, and the integration of passive cooling strategies. It emphasizes international cooperation, the adoption of national cooling action plans, and the establishment of energy performance standards. The pledge also calls for increased access to sustainable cooling, especially in vulnerable regions, and aims to address the dual challenge of climate mitigation and adaptation while supporting a just energy transition. Participants commit to review progress annually and encourage broader participation by governments, the private sector, and other stakeholders.
Global Cool Cities Alliance (GCCA)	Multiplier	The GCCA, operating between 2010-2023, aimed to advance global heat mitigation through policies promoting cooler, healthier cities and climate resilience. Its mission centered on increasing the solar reflectance of urban surfaces—roofs, walls, and roads—as a cost-effective way to reduce UHIE, improve energy efficiency, and mitigate climate change impacts. GCCA fostered partnerships with cities, governments, and companies, provided tools like the Cool Roofs and Pavements Toolkit, integrated cool surfaces into building codes, supported research, and spurred market development to expand the adoption of cooling materials and strategies worldwide.
Global Alliance for Buildings and Construction (GlobalABC)	United Nations Environment Programme (UNEP)	The GlobalABC is a collaborative platform launched at COP21 and hosted by the United Nations Environment Programme (UNEP) that brings together 290 members, including 42 countries, to promote a zero-emission, efficient and resilient buildings and construction sector. GlobalABC's goals include advocating for market transformation, catalyzing action toward carbon neutrality in the built environment, and providing a trusted platform for setting targets and tracking progress toward decarbonization. It also supports countries in developing policy guidance and roadmaps tailored to their specific needs and assists the private sector in transitioning to sustainable business models focused on decarbonizing buildings.
Declaration de Chaillot	Government of France and United Nations	On 2024, the French government and UNEP organized the first Buildings and Climate Global Forum dedicated to the decarbonization and climate

	Environment Programme (UNEP)	resilience of buildings. 800 representatives of state and non-state organizations involved in the buildings sector (engineering, construction, real estate) and 80 ministerial delegations from various governments were invited. Governments were invited to endorse a common declaration outlining common principles and cooperation framework for global efforts to achieve decarbonization and climate change resilience in the buildings sector. All stakeholders of the buildings sector were invited to disclose specific engagements to support the Forum's ambition. NbS and passive design were delineated as critical measures to be accelerated.
Generation Restoration	UN Decade on Ecosystem Restoration/ United Nations Environment Programme (UNEP) / Food and Agriculture Organisation (FAO)	Generation Restoration is an initiative under the UN Decade on Ecosystem Restoration (2021-2030), led by UNEP, that aims to catalyze large-scale restoration of urban ecosystems to address the environmental degradation caused by rapid urbanization. The program focuses on implementing NbS in cities to enhance biodiversity, improve air and water quality, mitigate climate change, and create sustainable jobs. By working with urban stakeholders and leveraging public and private investment, Generation Restoration aims to reconnect urban areas with nature, making cities more resilient and liveable while contributing to global biodiversity and climate goals.
CitiesWithNature	Local Governments for Sustainability (ICLEI)	CitiesWithNature is a global initiative that aims to integrate nature into urban planning and development, recognizing the critical role that healthy ecosystems play in sustaining life and improving the quality of life in cities. Cities and their partners can work together in protecting urban biodiversity, preventing the loss of natural systems and promoting sustainable urban development. The initiative aims to promote collective action to ensure that nature is valued and conserved in urban areas, contributing to the long-term health and sustainability of people and the planet.
Urban Nature Declaration	C40 Cities	The Urban Nature Declaration, part of the C40 initiative, aims to make cities greener and more resilient by integrating nature into urban environments. It aims to set ambitious nature goals that enhance urban green and blue spaces, promote biodiversity, and increase climate resilience, while ensuring equitable access to these natural resources, especially for vulnerable and marginalized communities. The Declaration emphasizes the importance of nature in mitigating climate risks, improving public health, and supporting sustainable livelihoods. Signatory cities commit to specific actions and timelines to protect, restore, and expand urban nature in line with global climate goals and to promote a harmonious relationship between urban development and natural ecosystems.
Cool Cities Network	C40 Cities	The Cool Cities Network, led by Athens and C40 Cities, supports urban efforts to combat extreme heat exacerbated by the UHIE, which intensifies health risks, energy demands, and pollution. By sharing knowledge and strategies, cities focus on key areas: heat mapping, emergency management, integrating heat into urban planning, advocating for heat action, and implementing solutions like cool roofs, green infrastructure, and urban forests. This collaboration fosters scalable, sustainable approaches to reduce UHIE and improve quality of life.
Cities for Forests	World Resources Institute (WRI)	Cities4Forests is a global alliance of cities committed to the conservation, restoration and sustainable management of forests and nature for human well-being and urban resilience. The initiative supports cities in protecting urban forests, nearby forests and distant tropical forests through technical assistance, political engagement and financial strategies. By fostering sustainable relationships between cities and forests, Cities4Forests aims to address interlinked challenges such as climate change, water insecurity and biodiversity loss, while promoting social equity and improving the quality of life for city dwellers. The Alliance helps cities integrate NbS

Million Cool Roofs Challenge	Clean Cooling Collaborative/ Global Cool Cities Alliance/ Sustainable Energy for All/ Challenge Works	into their urban planning and policy-making processes to create a healthier, more sustainable future. The Million Cool Roofs Challenge was a global competition aimed at rapidly scaling the deployment of solar-reflective 'cool' roofs in developing countries that face significant heat stress and lack widespread access to cooling services. Organized by the Clean Cooling Collaborative in partnership with several international organizations, the challenge sought to reduce cooling-related energy demand, improve living conditions, and mitigate the UHIE by promoting the use of reflective roofing materials. These cool roofs not only lower indoor temperatures, providing a passive cooling solution, but also contribute to reducing local ambient temperatures when deployed widely, while creating sustainable job opportunities in both urban and rural areas. The challenge highlighted the importance of accessible cooling solutions as a key factor in improving public health and resilience to climate change.
Climate Promise	United Nations Development Programme (UNDP)	UNDP has launched the Climate Promise which supports over 120 countries, in collaboration with 35 partners and is a major contributor to the NDC Partnership. The initiative provides country technical support in key areas such as just transition, circular economy, transparency, net-zero pathways, gender mainstreaming, urban planning related issues.
IFC Sustainable Cooling Initiative	International Finance Corporation (IFC)	The IFC Sustainable Cooling Initiative is the first global effort of its kind to systematically address cooling. Unlike traditional financing programs that focus narrowly on energy efficiency or infrastructure, this initiative integrates financial innovation, policy engagement, and technology adoption to create a comprehensive approach to sustainable cooling. By embedding cooling into green building standards and investment strategies, IFC positions cooling not as a standalone sector, but as a cross-cutting enabler of health, productivity, and climate resilience. This makes the initiative uniquely capable of mobilizing large-scale private sector investment while aligning with global sustainability goals.

Another distinctive feature of the IFC initiative is its emphasis on emerging markets, where demand for cooling is growing fastest and the risks of lock-in to inefficient, high-emission systems are greatest. Through its five modes of engagement—thought leadership, transformative systems development, investment readiness, de-risking finance, and scaling investment—IFC provides governments, investors, and developers with tools to adopt passive and nature-based solutions alongside advanced cooling technologies. By pioneering this holistic model, the IFC Sustainable Cooling Initiative sets a precedent for how finance institutions can catalyze systemic change in the cooling sector, balancing climate mitigation, adaptation, and equitable access.

In the pursuit of reducing GHG emissions through improved cooling solutions, the NCC aims to integrate and generate partnerships with existing methodologies and tools. These tools, which aid in the design, measurement, and management of cooling initiatives, play a critical role in assessing indoor and outdoor cooling and implementing passive strategies. By collaborating with established frameworks, the NCC seeks to create synergies that enhance the effectiveness of its initiatives. This approach will ensure that efforts to improve cooling efficiency are not only impactful but also aligned with broader global and local climate objectives. Table 4 displays existing initiatives that have developed modelling tools for urban cooling solutions.

Table 4 - Selected examples of existing modelling tools

Organization/ initiative	Name of the model	Type of scenario
Google	Environmental Insights Explorer (EIE)	The Environmental Insights Explorer (EIE) is a free data and insights tool that helps cities and regions measure emissions, analyze trends, and develop strategies for reducing emissions, supporting sustainable and climate-resilient communities.
	Building emissions	Estimated emissions from heating, cooling, and powering residential and non-residential buildings, based on Google maps data.
	Tree Canopy	Estimated tree canopy coverage across cities and regions, based on aerial imagery, AI, and machine learning algorithms.
	Heat Resilience Lab	Estimated rooftop reflexivity in select cities, based on AI algorithms trained on high resolution aerial imagery combined with satellite measurements.
World Bank, Advanced Practices for Environmental Excellence in Cities (APEX)	APEX Green Cities App	Evaluates GHG emission reduction potential from green measures in the built environment.
Connecting Nature Project (Trinity College Dublin, Glasgow City Council, Universidade da Coruña)	CO-IMPACT	CO-IMPACT is a decision-support tool allowing officers and cities to create impact assessment plans for their NBS/projects.
ARUP	UHeat AI Tool	Arup's UHeat tool combines remote sensing data with climate model to calculate UHIE across the entire city. The tool can provide support to urban planners, policy makers to plan design interventions for urban heat mitigation.
C40 Cities	Heat Resilient Cities	The Excel-based Heat Resilient Cities benefits tool has been designed to help city planners and decision-makers to quantify the health, economic and environmental benefits of common urban heat adaptation actions.
Group on Earth Observations (GEO)	Global Heat Resilience Service	Global Heat Resilience Service will provide city-specific information to respond to extreme heat. Using a mix of data sources, including satellites, field measurements, local surveys, and geospatial data, the service will help cities to better understand and prepare for heat-related risks.

A.2.3. National frameworks and plans aligned with reducing cooling associated emissions in Brazil, Cambodia and Cote d'Ivoire

A.2.3.1. National frameworks and plans aligned with reducing cooling associated emissions in Brazil

Brazil's extensive territory includes a wide range of bioclimatic zones, from equatorial and tropical climates in the north and central regions to subtropical climates in the south. The Amazon forest plays a major role in determining rainfall patterns across South America, which has a significant impact on the planet's energy balance. Forest formations such as

humid forests and seasonal forests dominate the Amazon and Atlantic Forest regions, while savannas dominate the Cerrado and other areas. The northeastern Caatinga has steppe savannas, and the far southern regions, including the Pampa biome, have plateaus and prairies. Campinaranas, unique forest ecosystems, are found mainly in the Amazon and the Rio Negro watershed. Northern and central Brazil is characterized by equatorial and tropical climates, with frequent rainfall and higher temperatures, while the south has a humid subtropical climate. The northeast is known for its semi-arid climate, with less than 700 mm of rainfall per year ([World Bank, 2021](#)).

Climate variability in Brazil is influenced by the South American Monsoon System (SAMS), the El Niño Southern Oscillation (ENSO) and the Inter-Tropical Convergence Zone (ITCZ). The monsoon season typically begins in early October in tropical Brazil, with the Amazon Basin receiving significant rainfall during the austral summer (December to February). Historical climate data indicate that Brazil's average annual temperature is about 25.6°C, with average monthly temperatures ranging from 23°C to 25°C. The average annual rainfall is about 1,755 mm. The highest rainfall occurs between December and March. The spatial variation in observed average annual precipitation and temperature across Brazil reflects the country's diverse climatic zones, which contribute to its diverse ecological landscape ([World Bank, 2021](#)).

A study conducted in the city of São Paulo, using remote sensing techniques over a ten-year period (2013-2023), shows that surfaces showed persistent UHIE with increased urbanization and reduced green areas (Figure 2). The study identified urban heat hotspots, particularly in the central and eastern regions, characterized by high urban density and low vegetation cover, while the southern and northern districts maintain cooler temperatures due to greater vegetation density, in comparison with the north and east that show higher land surface temperatures (Figure 3). The study highlights the need for urban greening initiatives to mitigate temperature rises and emphasizes the importance of long-term data monitoring to guide urban planning and adaptation strategies ([I Nogueira Liguori et al, 2023](#)).

Figure 2 - Normalized Difference Vegetation Index (NDVI) maps for 2013, 2017, and 2023

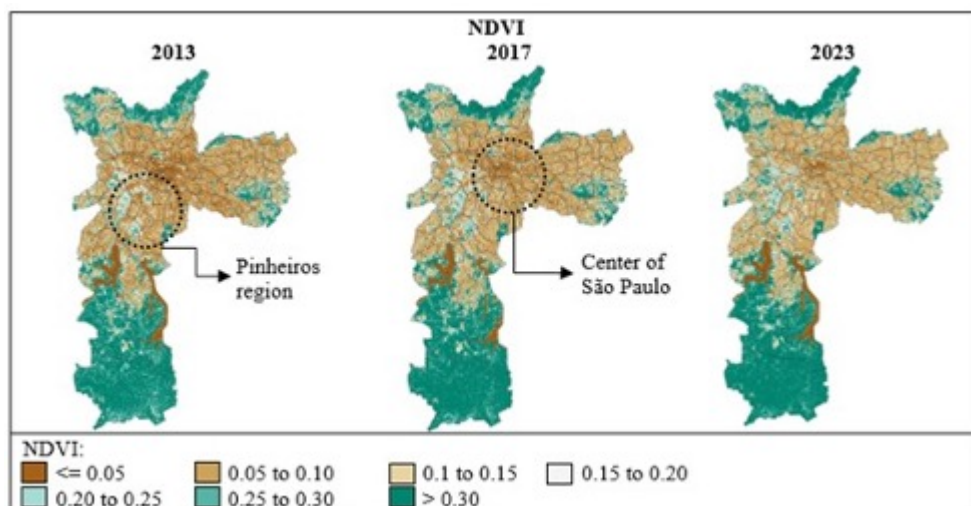
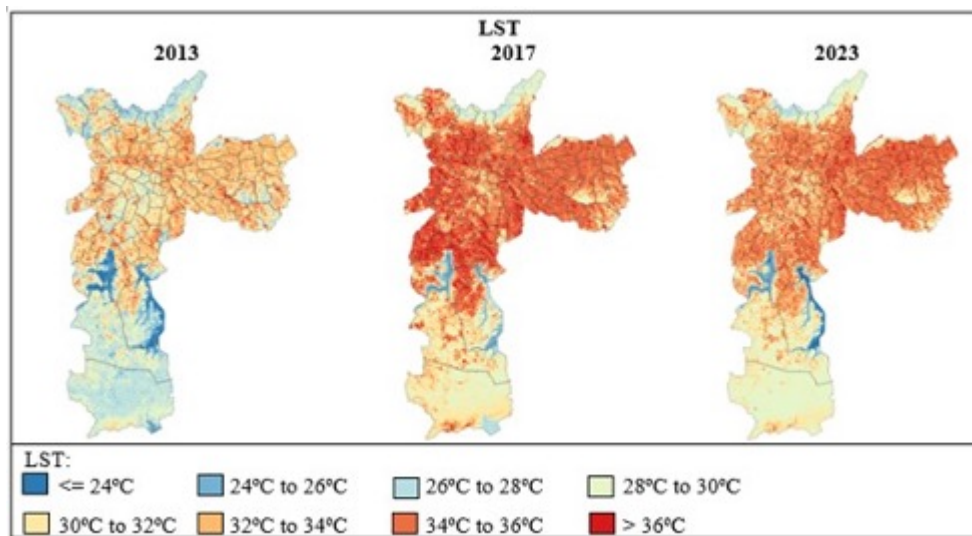


Figure 3- Land Surface Temperature (LST) maps for 2012, 2017, and 2023



Brazil's approach to climate change is structured through several key legislative and policy frameworks aimed at adaptation and mitigation. The National Policy for Climate Change (PNMC), established by Law 12187 in December 2009, underpins the development of the National Adaptation Plan (NAP) ([Ministry of Environment, 2016](#)), mandating governmental levels to implement climate adaptation measures. Complementing this, the Sectoral Plans for Mitigation and Adaptation to Climate Change, initiated by Decree 7390 in 2010, tailor strategies to enhance resilience across various sectors to the adverse impacts of climate change, incorporating risk management with mitigation efforts where feasible.

Further integrating these efforts, the National Civil Defence and Protection Policy, established by Law 12608 in April 2012, focuses on reducing disaster risks and enhancing adaptive capacities at municipal levels, fostering collaboration between public and private sectors. On the international front, Brazil actively participates in the UNFCCC, aligning national plans with global commitments to adapt and mitigate climate impacts. These national initiatives are part of a broader strategy to incorporate climate change risks into sustainable development goals, acknowledging the increased frequency of extreme events and the necessity for comprehensive adaptation strategies ([Ministry of Foreign Affairs, 2020](#)).

In 2020, Brazil emitted 2.16 billion tCO₂e, making it one of the world's leading annual emitters. However, on a per capita basis, Brazil is considered a low-emission intensity country, with each Brazilian emitting an average of 1.9 tCO₂e. This figure is approximately a seventh of the emissions of an average American and a third of the emissions of an average European or Chinese citizen ([CEBRI, 2023](#)).

Energy-related emissions in Brazil reached 393.7 million tCO₂e in 2020 (SEEG, 2021). A breakdown of these emissions by sector reveals the contributions of various consumption segments to the country's climate goals. Specifically, transportation (47%), fuel production (18%), electricity generation (8%), and industry (17%) together account for nearly 90% of Brazil's energy-related emissions.

Brazil's updated Nationally Determined Contribution (NDC), reaffirmed on October 27, 2023, sets specific targets for reducing GHG emissions, aiming for a 48.4% reduction by 2025 and a 53.1% reduction by 2030, both relative to 2005 levels. This update aligns with Brazil's long-term goal of achieving climate neutrality by 2050. The NDC was adjusted in response to decisions from the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) and aims to demonstrate Brazil's commitment to the Paris Agreement ([Government of Brazil, 2023](#)).

The NDC includes detailed quantifiable targets for 2025 and 2030, with emissions levels set at 1.32 GtCO₂e and 1.20 GtCO₂e, respectively. It outlines the timeframe for implementation from 2020 to 2030, covering economy-wide absolute

targets. The scope of Brazil's NDC encompasses all significant GHG emissions and is supported by data from the national inventory. Methodologically, emissions will be calculated based on IPCC guidelines, and the results will inform future updates to the NDC as part of Brazil's ongoing commitment to international climate goals ([Government of Brazil, 2023](#)).

Brazil's warmest regions are in the north, with significant heat also occurring along the northeastern coast. Since 1980, temperatures in the Amazon Basin have risen by 0.5°C, with higher rates of warming observed during the dry season from August to November. Winter temperatures are increasing, reducing the frequency of cool nights, while the number of warm days and nights has increased significantly, especially during the dry season. The rise in temperatures, in combination with high humidity, has led to an escalation in heat indicators, especially in areas of low altitude and in the north-central region. In southern Brazil, however, extreme low temperatures continue to occur, although these events have become less frequent over the past 50 years ([World Bank, 2021](#)).

Future projections from climate models suggest that average annual temperatures in Brazil will increase by 1.7°C to 5.3°C by the end of the century, with the largest increases expected in January and July. The central regions are expected to experience the greatest temperature increases, with the interior warming faster than the coastal regions. Rising sea surface temperatures could also affect coastal regions by reducing the cooling effect of ocean air. The frequency and duration of heat waves in the Amazon are projected to increase significantly, with up to 214 additional days of extreme heat by the 2090s ([World Bank, 2021](#)).

Space cooling constitutes a substantial portion of residential electricity consumption in Brazil, currently accounting for about 14%. This demand is projected to rise as temperatures increase due to climate change. Studies have shown a clear link between climate change and elevated energy needs for maintaining thermal comfort ([P Bezerra et al, 2021](#)). The Brazilian population, especially the outdoor workers, has been exposed to extreme heat since at least the 1990s, with the Midwest being the most critical region ([D Bitencourt, 2020](#)).

Socio-economic factors such as population growth and rising income levels also significantly influence trends in air conditioner ownership and types. Many Brazilian households struggle to achieve ambient thermal comfort due to financial constraints. Consequently, increased income could lead to higher overall energy demand for space cooling. This trend was evident in the early 2000s. If population and income continue to grow, the ownership rate of air conditioning units in Brazil could reach 96 units per 100 households by 2035, up from the current average of 40 units ([P Bezerra et al, 2021](#)). Furthermore, Brazilian women face entrenched structural inequalities that heighten their vulnerability to climate-related risks like heatwaves, with disproportionate impacts on black and brown women due to intersecting racial and economic barriers. Despite their educational gains, women remain underrepresented in the workforce, overburdened by caregiving, and excluded from climate decision-making, leaving gender largely unaddressed in Brazil's adaptation policies.^[2]

Brazil's energy matrix is strongly characterised by its renewability, with around 49% of primary energy coming from renewable sources in 2020, which puts the country at the forefront of the transition to a low-carbon economy. This profile is underpinned by a combination of hydroelectricity, biomass and, more recently, growing contributions from wind and solar energy, i.e. 70 % renewable ([CEBRI, 2023](#)).

Brazil's final energy consumption is dominated by the transport and industrial sectors, which together account for 75% of total consumption. By 2050, energy consumption in the industrial sector is expected to increase significantly, with bioenergy playing a key role. In the transport sector, oil currently accounts for 75% of energy consumption, but its share is expected to decline, with bioenergy becoming the dominant fuel by the early 2040s. In the residential sector in Brazil, the use of bioenergy and oil for heating and cooking is high. However, increasing access to clean cooking and electrification are expected to reduce the traditional use of biomass. Electricity demand, particularly for cooling, is projected to triple by 2050, although energy efficiency measures could mitigate this growth ([IEA, 2023](#)).

Investment in clean energy is expected to increase significantly, with clean energy accounting for 1.4% of Brazil's GDP by 2050 in the Stated Policies Scenario (STEPS) and 1.8% in the Announced Pledges Scenario (APS). Investments in clean energy are expected to exceed those in fossil fuels, with a focus on hydro, wind and solar power to meet the growth in electricity demand. Hydrogen production is also expected to increase, driven by national strategies to increase low-emission hydrogen production to 4 Mt by 2050 ([IEA, 2023](#)).

Table 5- Relevant National Policies and Plans - Brazil

Element	Description
National Plan on Climate Change (Government of Brazil, 2008)	The National Climate Change Plan (Decree nº 6263) aims to coordinate and implement measures across different sectors to reduce GHG emissions and adapt to climate change. Central to the plan is the promotion of the use of renewable energy, with targets to generate more than 80% of energy from renewable sources by 2030 and to increase the use of biofuels in industry. In particular, the plan includes aggressive targets for reducing deforestation in the Amazon, aiming for an 80% reduction by 2020 based on historical averages, and promoting the expansion of planted forests for environmental restoration. These measures are directly linked to cooling measures by reducing emissions through renewable energy and maintaining forest cover to enhance carbon sequestration, thereby mitigating the UHIE and contributing to global cooling efforts.
National Policy on Climate Change (PNMC) (Presidency of Brazil, 2009)	The Brazilian National Policy on Climate Change (PNMC), established by Law No. 12.187 of 29 December 2009, sets out comprehensive strategies to address climate change through mitigation and adaptation measures. It emphasizes the reduction of anthropogenic GHG emissions and the enhancement of natural carbon sinks, with the aim of reducing projected emissions by 36.1% to 38.9% by 2020. The policy promotes economic, social and environmental development in harmony with climate protection and includes specific measures such as increasing the use of renewable energy, preventing deforestation and expanding protected areas. It also promotes the development of the Brazilian Market for Emission Reductions (MBRE), which facilitates the trading of certified emission reductions. This policy directly supports cooling measures by reducing emissions, increasing forest cover and promoting sustainable land management practices, all of which contribute to lowering atmospheric temperatures and combating global warming.
Inova Energy Plan (Inova, 2013)	The Inova Energy Plan, launched with funding from BNDES, FINEP, and ANEEL, aimed to advance the development of smart grids, renewable energy, and hybrid and energy-efficient vehicles in Brazil. By facilitating cooperation and knowledge sharing among companies and technology institutes, Inova offered grants and soft loans covering up to 90% of project costs. The initiative, which began accepting applications from private entities in 2013 and completed its selection process in February 2014 by supporting 57 companies, directly contributes to cooling actions by promoting technologies that reduce energy consumption and GHG emissions. This focus on sustainable energy solutions aligns with broader climate change mitigation efforts, enhancing overall energy efficiency and fostering the use of renewable resources.
National Adaptation Plan (NAP) (Ministry of Environment, 2016)	Brazil's NAP aims to manage and mitigate long-term climate risks through structured initiatives that include public input and expert advice. Developed between 2013 and 2016, the NAP is aligned with the National Climate Change Policy and integrates sectoral adaptation and mitigation plans. It emphasizes the need for coordinated action across levels of government and sectors to address the multiple impacts of climate change, which include increased frequency of extreme weather events, shifts in rainfall patterns and the resulting socio-economic impacts across Brazil. The plan includes detailed strategies for different sectors, such as agriculture, biodiversity, urban areas and infrastructure, to increase resilience and effectively adapt to changing climate conditions. The NAP also establishes a framework for ongoing monitoring, evaluation and public consultation to dynamically adapt to new challenges and insights as they emerge.
Alliance Program for Energy Efficiency (Government of Brazil, 2019)	The Alliance Program is a collaborative initiative between the Brazilian industrial sector and the Federal Government aimed at embedding a culture of energy efficiency in energy-intensive industries. Through this program, industrial plants receive technical and cultural consulting services, with funding support from Procel, which covers up to 40% of project

	costs, while industries commit to at least 60% of the investment. A key requirement is that industrial leadership ensures optimal energy management practices for at least 24 months, supported by regular technical monitoring. An initial R\$10 million investment will support the development and implementation of projects to reduce electricity consumption, partially funded through Procel's Resource Application Plan (PAR 2018/2019).
GEF 7 UrbanShift Program (GEF-7, 2018)	Building on the experience and lessons learnt from this pilot, the Sustainable Cities Impact Program in the GEF-7 cycle (2018-2022) advances the integrated approach of urban planning and implementation under its brand name UrbanShift. The program is supporting 23 cities in 9 countries, including Brazil, and focuses on integrated urban planning, low-carbon infrastructure, sustainable waste management and NbS for urban sustainability.
National Energy Plan (EPE, 2020)	The National Energy Plan 2050 is a strategic framework that guides the development of Brazil's energy sector until 2050. It includes a series of detailed studies to support the government's strategy to anticipate and shape the future of energy consumption and production. In particular, the plan focuses on diversifying energy sources by integrating significant increases in renewable energy and improving overall energy efficiency. The implementation of PNE 2050 aims to optimize national energy resources, emphasizing the transition to a low-carbon economy and the integration of innovative technologies, such as smart grids and renewable energy systems, which contribute to cooling measures by reducing dependence on fossil fuels and minimizing environmental impacts.
Urban Bioconnection Alliance (Redus, 2021)	The Urban Bioconnection Alliance is a group that works for the sustainability of cities, making them more resilient to face climate change. It creates shared solutions that help create public policies and increase investments in NbS, with the aim of discussing, improving, scaling, and applying interventions inspired by healthy ecosystems to address urgent problems in society, especially in cities.
PDE 2031 10-year Plan for Energy Expansion (Ministry of Mines and Energy, 2022)	The Ten-Year Energy Expansion Plan (PDE) is an annual strategic report developed by the Brazilian Energy Research Office (EPE) under the guidance of the Ministry of Mines and Energy. It provides a ten-year forecast for the expansion of the energy sector, emphasizing a balanced integration of different energy sources to ensure economic growth, strategic use of resources and socio-environmental responsibility. The plan aims to promote energy reliability and cost-effectiveness while maintaining environmental sustainability, thereby contributing to the national strategy for reducing GHG emissions and improving the overall energy infrastructure.
Brazil First NDC (Government of Brazil, 2023)	Through this communication, Brazil confirms its absolute net GHG emission target in 2025 of 1.32 GtCO₂e, consistent with a reduction of 48.4% in comparison with 2005, according to the latest inventory data. Additionally, Brazil commits to an absolute net GHG emission target in 2030 of 1.20 GtCO₂e, consistent with a reduction of 53.1% in comparison with 2005, according to the latest inventory data.
Law No. 14904 (Brazil Presidency, 2024)	Law No. 14904 establishes guidelines for the development of climate adaptation plans in Brazil, aiming to reduce vulnerability and exposure to climate risks across environmental, social, economic, and infrastructure systems. It amends Law No. 12114/2009 and aligns with the PNMC.
	The law mandates that adaptation plans integrate climate risk management into existing sectoral policies and development strategies at local, municipal, state, regional, and national levels. It sets principles for identifying and prioritizing adaptation measures, enhancing climate resilience, and incorporating NbS.
Brazil Second NDC Contribution (Government of Brazil, 2023)	Brazil's NDC commits to reducing net GHG emissions by 59% to 67% below 2005 levels by 2035, aligning with its long-term goal of achieving net-zero emissions by 2050. The NDC emphasizes an economy-wide approach, integrating mitigation actions across key sectors such as land use, energy, industry, and transportation.
Resilient Green Cities Program (Presidency of Brazil, 2024)	The Resilient Green Cities Program (PCVR) was established by Decree No. 12041 on June 5, 2024. Its goal is to enhance environmental quality and resilience of Brazilian cities to climate change impacts by integrating urban, environmental, and climate policies, promoting sustainable practices, and valuing the ecosystem services of urban greenery. The program is coordinated by the Ministry of Environment and Climate Change, in partnership with the Ministries of Cities and Science, Technology, and Innovation. PCVR will focus on NbS, green spaces and urban tree planting, sustainable land use, low-carbon technologies, sustainable urban mobility, and waste management.

AdaptaCidades ([MMA, 2024](#))

AdaptaCidades is an initiative under the Green Resilient Cities Program, led by the Ministry of Environment and Climate Change (MMA) of Brazil, with support from the Ministries of Science, Technology, and Innovation, and Cities. The initiative aims to strengthen climate adaptation and resilience policies, fostering integration and coordination between national and local governments. Established through Ordinance GM/MMA No. 1,256/2024, AdaptaCidades emerged from a participatory process that gathered contributions from federal, state, and municipal representatives in four workshops held throughout 2024. Its primary goal is to enhance the capacity of states and municipalities in climate adaptation, supporting the development of municipal and regional adaptation plans.

Cities4Forests ([WRI, 2024](#))

Cities4Forests is a global alliance of over 80 cities committed to conserving, restoring, and sustainably managing forests to enhance urban resilience and human well-being. The initiative supports cities in driving policy change, mobilizing financing for NbS, and advocating for tropical forest conservation. It operates across three scales: urban forests that mitigate heat and flooding, nearby forests that protect water resources, and tropical forests that serve as vital carbon and biodiversity reserves. Through this approach, Cities4Forests helps cities integrate NbS into urban planning for local and global environmental impact.

A.2.3.2. National frameworks and plans aligned with reducing cooling associated emissions in Côte d'Ivoire

Côte d'Ivoire is located in West Africa, covering an area of 322,462 km² and 566 km of coastline along the Atlantic Ocean. In 2023, the country had an estimated population of 31.2 million and a GDP of USD 78.9 billion (current USD), resulting in a GDP per capita of USD 2,531 ([World Bank, 2025](#)). Its economy relies heavily on the primary sector, particularly agriculture, livestock, fishing, and forestry, which together contributed between 21% and 22.7% of GDP from 2013 to 2017, reflecting its dependence on natural resources.

It has a diverse climate, transitioning from equatorial in the south to semi-arid tropical in the north, with distinct rainfall patterns across regions ([Ministry of Environment, 2023](#)). The north experiences a unimodal rainy season, while the central and southern regions have a bimodal rainfall pattern, with precipitation reaching over 350 mm in peak months. The country also has significant temperature variations between regions and seasons, supporting rich biodiversity, including tropical rainforests in the south. With, Côte d'Ivoire is home to 16 national parks, 234 classified forests, and diverse wildlife, including elephants, monkeys, and pygmy hippos. The country has abundant water resources, both surface and groundwater, distributed nationwide.

Côte d'Ivoire is experiencing increasing climate variability, with rising temperatures and more frequent extreme weather events contributing to intensified UHIE, particularly in densely populated cities such as Abidjan. National climate projections indicate that average temperatures are expected to rise by between 1.7°C and 3.7°C by 2080 in the low (RCP2.6) and high emissions RCP6.0, scenarios, respectively. This warming is expected to lead to more very hot days and an increase in the population exposed to heatwaves from 9% in 2000 to 31% by 2080 ([GIZ, 2020](#)). The combination of climate change and rapid urbanization has resulted in higher cooling demand and increased energy consumption in buildings, exacerbating greenhouse gas emissions.

Côte d'Ivoire's total GHG emissions reached 51.5 MtCO₂e in 2020 ([Ministry of Environment, 2023](#)), with the energy sector accounting for 25.7% of these emissions (13.3 MtCO₂e). A significant portion of energy-related emissions is attributed to buildings (2.5 MtCO₂e), representing roughly 5% of the total national emissions, where the expanding urban landscape and rising incomes are increasing electricity demand for cooling.

Urban areas, where over 50% of the population resides, are particularly vulnerable to these warming trends, leading to a growing reliance on energy-intensive air conditioning and refrigeration. Moreover, women and girls in Côte d'Ivoire are

disproportionately vulnerable to heat-related risks due to physiological sensitivity, limited access to health and digital services, and unequal economic participation, especially in agriculture. These risks are compounded by gender norms and low political representation, which hinder women's ability to access resources, shape climate policies, and respond effectively to heat stress events.^[3]

Côte d'Ivoire submitted its revised NDC in 2022, setting an unconditional target of reducing economy-wide emissions by 30.41% and a conditional target of 98.95% by 2030, contingent on international support ([Government of Côte d'Ivoire, 2022](#)). The updated NDC encompasses mitigation commitments in the energy, waste, agriculture, and forestry sectors, while also outlining adaptation targets for agriculture, forestry and other land use (AFOLU), water resources, and coastal zones. The estimated financial requirement for implementation stands at USD 10 billion for mitigation and USD 12 billion for adaptation measures. Additionally, Côte d'Ivoire is in the process of developing its LT-LEDS to establish a roadmap for achieving deep decarbonization in the coming decades.

To address this challenge, Côte d'Ivoire has introduced various policies and strategies to improve energy efficiency in buildings and urban infrastructure. The National Energy Efficiency Action Plan (PNAEE) sets ambitious targets to improve energy efficiency across sectors, with a strong focus on reducing energy consumption in residential and commercial buildings ([ECREEE, 2016](#)). The plan promotes the implementation of energy-efficient building codes, passive cooling design, and climate-responsive urban planning to minimize the growing demand for air conditioning. Moreover, the Energy Efficiency Code for Buildings (EECB) sets mandatory energy efficiency standards for new and existing buildings, promoting passive cooling techniques, better insulation, and high-performance construction materials. Additionally, urban planning frameworks are being revised to encourage climate-responsive building designs, green roofs, and improved natural ventilation, aiming to reduce the need for mechanical cooling.

Table 6 - Relevant National Policies and Plans - Côte d'Ivoire

Element	Description
Promotion of intensive agroforestry systems in support of the implementation of the national strategy for the Reduction of Greenhouse Gas Emissions related to Deforestation and Forest Degradation (REDD+) (ONU-REDD, 2013)	The Côte d'Ivoire Readiness Preparation Proposal (R-PP) outlines the country's strategy for preparing to implement the REDD+ mechanism, aimed at reducing emissions from deforestation and forest degradation while promoting sustainable forest management. The plan also prioritizes developing a robust monitoring, reporting, and verification (MRV) system to track emissions reductions and ensure transparency. Furthermore, it highlights the need for financial mechanisms, capacity building, and technical support to ensure the effective implementation of REDD+ strategies, aligning with Côte d'Ivoire's broader climate and sustainable development goals
National Energy Efficiency Action Plan (PNAEE) (ECREEE, 2016)	Côte d'Ivoire's National Energy Efficiency Action Plan (PANEE), developed under the ECOWAS Energy Efficiency Policy (EEEP), outlines key strategies to improve energy efficiency across multiple sectors, including buildings, industry, and electricity distribution. The plan aims to reduce energy consumption and enhance sustainability through standards for energy-efficient appliances, building codes, public lighting projects, and demand-side management initiatives.
Cities-IAP: Abidjan Integrated Sustainable Urban Planning and Management (GEF, 2016)	The project, led by AfDB and UNIDO, aims to enhance local capacity to assess and respond to environmental degradation through the application of integrated sustainable urban planning and management methods while encouraging the uptake of innovative lower carbon technologies to reduce GHG emissions and improve air quality in the city of Abidjan
REDD+ National Strategy (Government of Côte d'Ivoire, 2017)	A mechanism to compensate countries for their efforts to avoid deforestation. CDI has joined this mechanism, which enhances the economic value of standing forests by making them more profitable through conservation than through felling.

Forest Cover Recovery and Resilience Improvement Project in the Centre of Côte d'Ivoire

([CIF, 2018](#))

Sustainability and Scaling Up Approaches for Transformational Management, Restoration and Conservation of Forests Landscapes and Biodiversity in Côte d'Ivoire (SSATMARC - FOLAB)

([GEF, 2019](#))

Rural Electrification and Energy Efficiency in Public Buildings (ECLER IVOIRE)

([EU, 2022](#))

Emission Reduction Program (ERP) around the Taï National Park

([Government of Côte d'Ivoire, 2023](#))

Low-Carbon Transition in Côte d'Ivoire

([EU, 2023](#))

Resilience and Sustainability Facility (RDF) Arrangement for Côte d'Ivoire

([IMF, 2024](#))

Côte d'Ivoire Net-Zero Nature-Positive Integrated Program ([GEF, 2025](#))

Several projects have been implemented through this mechanism. Currently, the Emission reduction payment project (PRE) is underway to test outcome-based payment systems.

The program's goal is to help improving the population's resilience and increase the carbon sequestration capacity in the country. In particular, the objectives are: (i) preserve the Niger Basin ecosystems by reducing the silting process in the Niger River; ii) improve the resilience of agro-pastoral production systems; iii) improve integrated and shared management of natural resources; and iv) increase the forest cover of the old cocoa basin. The selected technical solutions seek to replicate activities that have already been successful in other areas of the country that were facing the same issues.

The project, led by UNEP, aims to set up and test a sustainable financing mechanism at the national level in order to combat forest degradation and deforestation, while supporting actions for the sustainable management of protected areas. At the end of the project, several mangroves and forest landscapes will be restored in conjunction with the Office of Parks and Reserves and the PES will have to be developed as additional sources of income. These achievements will allow the deployment of economic activities for the benefit of the local populations who live there, namely ecotourism.

The ECLER IVOIRE project aims to improve access to electricity for rural people in Côte d'Ivoire through solar energy and reduce energy consumption in public buildings. It is part of the programme to support the energy sector in Côte d'Ivoire financed by the European Union.

Two main areas of operation have been identified for the implementation of this project:

- Decentralised rural electrification through renewable energies
- Energy efficiency in public buildings.

It aims to define the new modalities of access to forests or natural resources by rural populations, whether or not they live near the Classified Forests (FC) and the Taï National Park (PNT) and the Mont Péko Park. It covers the measures to be taken in the event of a reduction in access to natural resources or their products, such as land, forest, wood and non-wood forest products, as a result of the activities and sub-projects of the ERP.

The project aims to strengthen Côte d'Ivoire's climate performance in climate change mitigation and adaptation, in line with the Paris Agreement. Its activities are structured around the following axes: 1. Creation of a national intersectoral coordination for climate action; 2. Centralization of measurement, reporting and verification (MRV) mechanisms; 3. Integration of climate issues into public policies; 4. Capacity building of decision-makers on climate issues.

The RSF arrangement will support the government's economic program for the period 2023-2026 with a view to macroeconomic stability and structural economic transformation to move Côte d'Ivoire towards an upper-middle-income country.

The Côte d'Ivoire Net-Zero Nature-Positive Integrated Program objective is to support the country integrate climate change mitigation and nature conservation strategies into its development strategy, to ensure a transition to a net-zero emissions and nature-positive trajectory. In alignment with the parent project, it will foster coherence and cross-sectoral institutional integration for net-zero and nature-positive targets, support resource mobilization through national and

subnational planning, and private capital, and encourage new technologies, business models, and institutional arrangements.

A.2.3.3 National frameworks and plans aligned with reducing cooling-associated emissions in Cambodia

Cambodia's geography and climate are shaped by its location in mainland Southeast Asia, bordered by Thailand, Laos, and Viet Nam, and influenced by the Gulf of Thailand. Cambodia's geography comprises lowland plains, coastal regions, and mountainous areas, each contributing to distinct climatic zones. The country experiences a tropical monsoon climate, with two primary seasons: a wet season from May to October and a dry season from November to April. The southwest monsoon brings heavy rainfall and high humidity, while the northeast monsoon brings cooler, drier air. Annual precipitation ranges from 1,400 mm in the central plains to over 5,000 mm in the southwestern highlands (Britannica, 2025; World Bank, 2025).

Cambodia experiences consistently high temperatures year-round due to its tropical monsoon climate. Average monthly maximum temperatures in Phnom Penh range from 31.7°C in January to 34.7°C in April, the hottest month. Record highs exceeding 40°C have been documented during the pre-monsoon season. Nighttime temperatures typically remain above 23°C, contributing to persistent thermal discomfort (World Bank, 2025).

Humidity levels are also high, ranging from 71% in the dry season to 84% during the wet season, with an annual average of 77%, as reported by the World Bank's Climate Risk Country Profile for Cambodia. This combination of heat and humidity significantly exacerbates heat stress, particularly in urban areas where the Urban Heat Island Effect (UHIE) intensifies perceived temperatures (World Bank, 2024).

Urban areas, particularly Phnom Penh, are experiencing the UHIE due to rapid urbanization, reduced green space, and increased impervious surfaces. Studies show temperature differences of up to 1.3°C between urban and suburban districts, with higher UHI intensity during the dry season (Se et al., 2025). These conditions contribute to thermal discomfort, increased energy demand, and health risks, especially for vulnerable populations.

Heat stress is projected to worsen, with serious implications for public health, productivity, and energy demand. Without adaptation, climate change could cost Cambodia up to 9% of its GDP by 2050 (World Bank, 2023). UNEP estimates that heat stress already results in annual economic losses of at least \$1.12 billion (UNEP, 2023).

With rising temperatures in Cambodia, the adoption of cooling technologies is accelerating, yet access remains highly unequal. Most households still lack air conditioning, but the demand for cooling technologies is rising. This growing adoption of ACs has serious implications for energy consumption and greenhouse gas emissions, as cooling already accounts for approximately 45% of the country's total electricity use, with space cooling in buildings responsible for 80% of that consumption (Government of Cambodia, 2023). Vulnerable populations—particularly in rural and low-income urban areas—especially women, children, the elderly, and people with disabilities face heightened risks due to physiological sensitivity and limited adaptive capacity, underscoring the urgency of inclusive and sustainable cooling solutions (UNESCAP, 2022; SEforALL, 2023).

To address rising cooling demand, Cambodia launched its National Cooling Action Plan (NCAP) in 2023, becoming the first Southeast Asian country to do so. Cooling already accounts for 45% of national electricity use, and demand is

expected to double in the next 20 years. The NCAP aims to reduce cooling-related emissions by 17% and electricity consumption by 20% by 2040, compared to a business-as-usual scenario (UNEP, 2023; SEforALL, 2023).

The NCAP outlines strategies across five sectors: building space cooling, food cold chains, healthcare cold chains, mobile air conditioning, and process cooling. It promotes energy-efficient appliances, low-GWP refrigerants, and passive cooling strategies. Cambodia's NCAP is a critical step toward climate-resilient development, integrating cooling into its broader energy efficiency and carbon neutrality strategies. It demonstrates a commitment to inclusive, sustainable cooling that protects health, supports livelihoods, and reduces emissions.

The plan is aligned with Cambodia's Second and Third Nationally Determined Contribution (NDC 3.0) under the Paris Agreement, which targets a 55% emissions reduction by 2035 under a conditional scenario (Government of Cambodia, 2025). Cambodia's NDC 3.0 emphasizes urban greening as a key strategy to enhance climate resilience in cities. Measures include expanding green spaces, promoting urban forestry, and integrating green infrastructure into urban planning to mitigate the Urban Heat Island Effect and improve air quality. These actions are aligned with broader goals to reduce cooling demand and enhance public health in densely populated areas.

Table 7 - Relevant National Policies and Plans - Cambodia

Element	Description
Cambodia Climate Change Strategic Plan (CCCSP) 2014-2023 (Government of Cambodia, 2013)	The CCCSP 2014-2023 was Cambodia's first comprehensive national strategy to guide climate change responses over a ten-year period. It aimed to mainstream climate change into national development planning and build resilience across sectors and communities. The plan was designed to align with existing government policies and international climate commitments, including the UNFCCC. The strategy focused on both adaptation and mitigation, promoting low-carbon development and enhancing the country's capacity to respond to climate risks. It outlined eight strategic objectives: 1. Promote climate resilience through improved food, water, and energy security. 2. Reduce vulnerability of sectors, regions, gender groups, and health systems to climate change impacts. 3. Ensure climate resilience of critical ecosystems such as Tonle Sap Lake, the Mekong River, coastal zones, and highlands, as well as biodiversity, protected areas, and cultural heritage sites. 4. Promote low-carbon planning and technologies to support sustainable development. 5. Improve capacities, knowledge, and awareness for climate change responses. 6. Promote adaptive social protection and participatory approaches to reduce loss and damage. 7. Strengthen institutions and coordination frameworks for national climate change responses.

8. Enhance collaboration and active participation in regional and global climate change processes.

The CCCSP served as a foundational framework for subsequent climate policies, including Cambodia's NDCs and the updated CCCSP 2024-203

Cooling Targets in Cambodia's 2020 NDC (NDC 2.0)

Cambodia's 2020 NDC recognized the growing energy demand for cooling, especially in buildings, and incorporated specific measures to address this challenge. The NDC included commitments to:

- Integrate passive cooling systems into the Building Energy Code, ensuring that new buildings meet performance requirements that reduce reliance on mechanical cooling.
- Promote passive cooling in public and commercial buildings, using design strategies that enhance natural ventilation, shading, and thermal insulation.
- Include climate change response measures in building design and construction, such as orientation, material selection, and envelope performance, to improve energy efficiency and thermal comfort.
- Support the development and enforcement of building codes and certification systems that reflect energy performance standards, including those related to cooling.

These measures were part of Cambodia's broader mitigation strategy in the energy sector, aiming to reduce electricity consumption in buildings by 29.7% by 2030. Passive cooling was identified as a key opportunity to achieve this target, especially given the country's hot-humid climate and rapid urbanization.

Pushing Energy Efficiency in Cambodia
([Government of Cambodia](#))

The "Pushing Energy Efficiency in Cambodia" project is led by a consortium of national and international partners including the Institute of Technology of Cambodia (ITC), Sevea, EuroCham Cambodia, and EnergyLab, with financial support from the Cambodia Climate Change Alliance (CCCA). This multi-stakeholder initiative brings together academic institutions, private sector actors, and civil society to promote energy efficiency in buildings through innovative approaches such as gamification, youth engagement, and capacity building. The project began in 2021 and is still ongoing.

This project aims to accelerate the adoption of energy efficiency practices in Cambodia's building sector by combining technical innovation, behavioral change, and youth engagement. Inspired by France's successful CUBE energy efficiency contest, the initiative uses gamification to encourage universities, institutions, and building managers to compete in reducing energy consumption.

Participants monitor their energy use and implement low-cost efficiency measures, such as improved lighting, air conditioning management, and behavioral nudges. The project also includes capacity-building workshops, awareness campaigns, and the development of a business association focused on energy transition.

Mainstreaming Climate Change and Increasing Resilience in the Education Sector (Ministry of Education, Youth and Sports 2021-2023) ([Government of Cambodia](#))

By engaging students and young professionals, the initiative fosters a new generation of energy champions and supports Cambodia's broader climate goals under its NDCs and Long-Term Strategy for Carbon Neutrality. It also contributes to the development of a market ecosystem for energy services and green building solutions.

Between February 2021 and July 2023, the project "Mainstreaming Climate Change and Increasing Resilience in the Education Sector" was implemented by the Ministry of Education, Youth and Sports (MoEYS) of Cambodia, through its Department of Curriculum Development and the Department of School Health, with funding support from Phase III of the Cambodia Climate Change Alliance (CCCA3). Operating in seven provinces, the project's objective was to strengthen the capacity of teachers, education officers, and students to engage in climate change adaptation and mitigation, and to reduce climate-related educational disruptions. It did so by developing and piloting teaching and learning materials on climate change in primary schools through the Eco-schools model, providing WASH (Water, Sanitation and Hygiene) training, and investing in climate-smart school infrastructure such as hand-washing stations, water storage facilities, and lightning protection. Secondary schools were similarly supported through training, infrastructure upgrades, and the strengthening of Eco-clubs to sustain climate action at the local level. By its conclusion, the project had reached more than 21,000 students, 700 teachers, and 100 school principals, while also producing new curricula, booklets, and tools on climate change education. These efforts not only improved resilience at the school and community level but also generated lessons and knowledge products intended to inform policy and the potential replication of the Eco-schools model across Cambodia. ([Government of Cambodia](#))

Energy Efficiency Policy (Ministry of Mines and Energy, 2021) ([Government of Cambodia, 2023](#))

The Energy Efficiency Policy, adopted by Cambodia's Ministry of Mines and Energy in 2021, provides a national framework to improve energy performance across all major sectors, including buildings, industry, transport, and agriculture. The policy aims to reduce energy intensity, lower greenhouse gas emissions, and support Cambodia's transition to a low-carbon economy.

A central focus of the policy is the building sector, where it promotes the adoption of energy-efficient design, technologies, and appliances. It supports the development and enforcement of building energy codes, including performance standards for passive cooling systems, natural ventilation, and daylighting. These measures are intended to reduce the reliance on mechanical cooling and improve thermal comfort, especially in urban and residential settings.

The policy also encourages the use of energy-efficient appliances through labeling programs and minimum energy performance standards (MEPS), targeting air conditioners, refrigerators, lighting, and other household and commercial equipment. It complements the goals of the National Cooling Action Plan (NCAP) by promoting low-GWP refrigerants and sustainable cooling technologies.

In addition to technical measures, the policy outlines strategies for capacity building, public awareness, and private sector engagement. It promotes energy audits, training programs, and incentives to encourage investment in energy-efficient solutions. The policy is aligned with Cambodia's climate commitments under

Piloting Energy Efficiency and Solar Micro Grids for Cambodia's Clean Energy Future (2021-2023) ([Government of Cambodia](#))

its NDCs and supports the implementation of the Long-Term Strategy for Carbon Neutrality.

The “Solar Microgrid and Energy Efficiency in Government Buildings” project (2021-2023) is coordinated by the Ministry of Mines and Energy (MME) in collaboration with local authorities and development partners. It is supported through climate finance mechanisms under the Cambodia Climate Change Alliance (CCCA).

Cambodia: Long-Term Strategy for Carbon Neutrality (LTS4CN) ([Ministry of Environment, 2021](#))

The project aimed to promote clean, affordable, and reliable energy by improving energy efficiency in public buildings and testing decentralized renewable solutions in rural areas. Through building audits, the development of energy management and procurement guidelines, and training programs for officials and facility managers, it enhanced capacity for sustainable energy use. In parallel, the installation and operation of a solar micro-grid in a remote village piloted new models for electricity provision, including tariff schemes and local operator training. Together, these initiatives demonstrated pathways to reduce greenhouse gas emissions, lower energy costs, and expand access to electricity, while generating lessons for replication at the national level.

Cambodia's Long-Term Strategy for Carbon Neutrality (LTS4CN), published in December 2021 by the Ministry of Environment and the National Council for Sustainable Development (NCSD), outlines the country's roadmap to achieve carbon neutrality by 2050. The strategy is built on detailed modeling across key sectors—energy, transport, agriculture, forestry and land use, industry, and waste—and proposes a balanced approach to emissions reduction, economic growth, and social inclusion. It identifies priority mitigation actions and aligns with Cambodia's climate commitments under its Updated NDC and broader development goals. The strategy projects significant co-benefits, including the creation of approximately 449,000 green jobs and an estimated 2.8% annual GDP growth driven by green investments. It emphasizes decarbonizing the power sector, improving energy efficiency, and promoting low-carbon technologies, while integrating climate action into national planning frameworks.

Asia Low Carbon Buildings Transition (ALCBT) Project 2023-2028 - Cambodia. ([GGGI, 2025](#))

The Asia Low Carbon Buildings Transition (ALCBT) Project is a five-year regional initiative (2023-2028) that seeks to reduce GHG emissions by catalyzing nationwide transitions towards low-carbon buildings in five Asian countries: Cambodia, India, Indonesia, Thailand, and Viet Nam. It is funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) through the International Climate Initiative (IKI). It is implemented by a consortium led by GGGI, in partnership with the ASEAN Centre for Energy (ACE), Energy Efficiency Services Limited (EESL), and HEAT International GmbH.

In Cambodia, the project is implemented in close collaboration with the Ministry of Land Management, Urban Planning, and Construction (MLMUPC). Its goal is to catalyze a nationwide transition toward low-carbon buildings by integrating lifecycle carbon assessment into building policies and practices.

Key Activities in Cambodia:

- **Training and Capacity Building:** In 2025, GGGI and HEAT International organized a national training on lifecycle carbon assessment using the Building Emission Assessment Tool (BEAT). The training, held in Phnom Penh, brought together policymakers, architects, developers, and energy auditors to build capacity in assessing both embodied and operational carbon in buildings.
- **Building Emission Assessment Tool (BEAT):** BEAT is a web-based platform developed by HEAT GmbH to support data-driven decisions in sustainable construction. It enables users to evaluate carbon emissions across a building's lifecycle and is being tailored with Cambodia-specific data.
- **Policy Integration:** The project supports the institutionalization of BEAT and its integration into Cambodia's national energy codes and technical building regulations. This aligns with the country's National Energy Efficiency Policy (NEEP) and Nationally Determined Contributions (NDCs).

Cambodia Climate Change Strategic Plan
(CCCSP) 2024-2033 (Ministry of
[Environment](#), 2025)

- **Challenges and Opportunities:** The project also addresses barriers such as the lack of verified Environmental Product Declarations (EPDs) and promotes the development of local data and standards to support carbon accounting in the building sector. Published in May 2025, the CCCSP 2024-2033 addresses gaps from the previous plan and aligns with Cambodia's NDC 3.0 and Long-Term Strategy for Carbon Neutrality. It supports the Pentagonal Strategy Phase 1 and the Circular Strategy on Environment 2023-2028. The plan focuses on:

- **Mitigation:** Reducing greenhouse gas emissions
- **Adaptation:** Strengthening resilience to climate impacts
- **Governance:** Promoting good governance and digital transformation

It emphasizes inclusivity, especially for vulnerable groups such as women and children. Implementation involves sectoral action plans, green finance, climate-smart agriculture, and resilient infrastructure. With the vision of "Carbon neutrality and climate resilience through sustainable and inclusive development."

Accelerating Energy Efficiency in Cambodia's
Building Sector 2024-2025 (Ministry of Mines and
Energy, UNDP, UNCDF, [Joint SDG Fund](#))

Launched in 2024, the initiative "Accelerating Energy Efficiency in Cambodia's Building Sector" seeks to overcome regulatory, market, and behavioral barriers to energy efficiency in Cambodia's fast-growing building sector. Implemented by UNDP and UNCDF with support from the Joint SDG Fund, the project promotes energy-efficient construction and retrofitting, integrates energy efficiency into national building codes, and mobilizes green finance instruments to scale investment. The ultimate goal is to reduce greenhouse gas emissions, lower energy costs, and contribute to Cambodia's sustainable urban development and climate targets.

Increasing Climate Resilience through Small-Scale
Infrastructure Investments and Enhancing
Adaptive Capacity of Vulnerable Communities in
Kampot and Koh Kong ([Ministry of Environment](#),
UN-Habitat, Adaptation Fund)

Th project "Increasing Climate Resilience through Small-Scale Infrastructure Investments and Enhancing Adaptive Capacity of Vulnerable Communities in Kampot and Koh Kong" is a four-year program, launched in September 2024, is jointly implemented by UN-Habitat, Cambodia's National Council for Sustainable Development of the Ministry of Environment, with funding from the

Building Resilient Livelihoods through Nature-based Solutions in Cambodia's Tonle Sap Basin and Siem Reap/Phnom Kulen Landscape 2024-2029 ([GEF, 2024](#); [UNDP Adaptation, 2024](#)).

Cooling Targets in Cambodia's NDC 3.0 (2025)

Adaptation Fund. It focuses on strengthening resilience in coastal provinces by investing in climate-resilient small-scale infrastructure, restoring coastal ecosystems through ecosystem-based adaptation, and building the adaptive capacity of vulnerable communities. The project responds to increasing climate risks such as flooding, storm surges, and sea-level rise, aiming to safeguard livelihoods and promote sustainable local development.

Launched with concept approval in June 2024, the project "Building Resilient Livelihoods through Nature-based Solutions in Cambodia's Tonle Sap Basin and Siem Reap/Phnom Kulen Landscape" is a five-year initiative (2024-2029) implemented by the United Nations Development Programme (UNDP) in partnership with Cambodia's Ministry of Environment and other local stakeholders. Funded under the Least Developed Countries Fund (LDCF) of the Global Environment Facility (GEF-8). It aims to strengthen community resilience to climate change by promoting nature-based solutions, including ecosystem restoration, integrated watershed management, and climate-smart livelihood strategies in vulnerable rural communities. By targeting the Tonle Sap Basin and the Phnom Kulen landscape, the project seeks to reduce exposure to floods and droughts, safeguard biodiversity, and enhance sustainable livelihoods, thereby contributing to both national climate adaptation priorities and the preservation of vital ecosystems.

Cambodia's NDC 3.0 builds upon the 2020 submission and the National Cooling Action Plan (NCAP), formally integrating cooling as a strategic climate mitigation priority. The document recognizes the growing demand for cooling due to urbanization, rising temperatures, and economic development, and outlines specific measures to address this challenge.

Cooling is addressed primarily under the energy sector, with mitigation actions focused on:

- Improving energy efficiency in building cooling systems, including the adoption of high-performance air conditioning and refrigeration technologies.
- Promoting passive cooling strategies in building design and urban planning, aligned with the Building Energy Code and the Passive Cooling Strategies for Sustainable Development Project.
- Expanding sustainable cold chains for agriculture, food, and health sectors, particularly to support rural and vulnerable communities.
- Transitioning to low-GWP refrigerants and strengthening refrigerant management practices to reduce hydrofluorocarbon (HFC) emissions.
- Enhancing access to sustainable cooling for all, especially in public buildings, schools, and healthcare facilities.
- Advancing urban greening as a nature-based solution to mitigate the Urban Heat Island Effect, reduce ambient temperatures, and improve air quality. This includes expanding tree cover, green roofs, vertical gardens, and green corridors, particularly in densely populated areas. Urban greening is also integrated into building codes and urban planning regulations, contributing to both mitigation and adaptation goals.

These cooling-related measures are part of the 49 mitigation actions endorsed by line ministries and contribute to Cambodia's conditional target of up to 55% GHG emissions reduction by 2035, equivalent to 73.7 MtCO_{2e}. The NDC 3.0 also emphasizes the role of cooling in climate adaptation, particularly in improving thermal comfort, public health, and resilience to heatwaves. ([Ministry of Environment, 2025](#))

A3. Barriers

Despite the growing recognition of NbS as effective strategies to counteract the UHIE and relieve rising temperatures, their large-scale implementation remains limited. Many cities, particularly in countries with less investment in climate adaptation, struggle to integrate NbS into urban planning and building design in ways that effectively reduce ambient temperatures and lower cooling demand. Challenges such as fragmented policies, limited technical expertise, and financial constraints hinder the widespread adoption of urban greening initiatives.

A3.1. Barrier 1: Weak International and National Collaboration for Scaling NbS for Cooling.

The large-scale adoption of NbS for cooling is limited by weak coordination across global, national, and local levels, limiting their integration into climate and urban planning policies. Additionally, insufficient collaboration between governments, the private sector, and knowledge-sharing platforms restricts access to funding, expertise, and best practices. Strengthening multi-level governance and cross-sector partnerships is essential to ensure NbS become a scalable and sustainable solution for urban cooling.

While some initiatives and improvements have been identified on the baselines assessment (Section A.2), there are still significant gaps to address. For instance, in Brazil efforts like the National Climate Change Plan, Resilient Green Cities Program, and Cities4Forests promote climate resilience and urban greening, but lack cohesive multi-sectoral integration. Côte d'Ivoire has made progress with the PNAEE and forest conservation projects like REDD+, yet struggles with integrating cooling strategies into urban planning. In Cambodia, frameworks such as the National Cooling Action Plan (NCAP) and NDC 3.0 on energy efficiency and cooling demand management exist, but gaps remain in fostering public-private partnerships and scaling cooling-specific NbS. To maximize the impact of these diverse efforts, it is essential to enhance stakeholder collaboration and coordination across public-private stakeholders at both national and international levels, fostering greater knowledge sharing and collective action.

3.1.1. Limited global and national coordination on integrating NbS into climate and urban development strategies.

The integration of NbS for cooling into climate and urban planning policies is hindered by fragmented coordination between global, national, and local governance structures. Many countries lack cohesive policy frameworks that align NbS initiatives with broader climate adaptation, mitigation, and urban development goals. Without clear mandates, institutional cooperation, and strategic alignment, NbS remain underutilized in addressing the UHIE and cooling-related energy demand. Strengthening policy coherence and multi-level governance mechanisms is critical to mainstreaming NbS into national and international climate agendas.

3.1.2. Lack of cross-sector partnerships between government agencies, private sector investors, and knowledge-sharing platforms.

The scaling and replication of NbS for cooling is constrained by limited collaboration between key stakeholders, including government agencies, private sector investors, financial institutions, and research organizations. The absence of structured partnerships restricts funding accessibility, technical expertise exchange, and the development of innovative business models for NbS implementation. Additionally, weak engagement with global knowledge-sharing platforms limits access to best practices, case studies, and policy recommendations that could drive large-scale adoption. Strengthening public-private partnerships (PPPs), investment networks, and technical cooperation is essential for ensuring NbS solutions receive the necessary support for long-term sustainability and widespread impact. Additionally, collaboration efforts often overlook the importance of gender inclusion, with limited partnerships focused on amplifying the role of women's organizations, community leaders, or gender ministries in NbS implementation.

A3.2. Barrier 2: Insufficient policy and regulatory frameworks.

The integration of NbS and passive cooling techniques into urban planning is hindered by insufficient policy and regulatory frameworks, particularly in fast-growing urban areas. Despite existing climate and adaptation policies in the countries invited to the initial NCC, these frameworks often lack cohesive planning protocols, regulatory enforcement, and dedicated urban cooling strategies. In Brazil, while initiatives such as the National Climate Change Policy and the NAP provide a basis for climate resilience, they do not adequately address urban cooling or integrate NbS into city planning. Côte d'Ivoire has made progress with the PNAEE and the Energy Efficiency Code for Buildings, yet challenges persist in mainstreaming passive cooling and integrating green infrastructure into urban development. Cambodia's National Cooling Action Plan (NCAP) and National Energy Efficiency Policy 2022 aim to enhance building efficiency and manage cooling demand, but gaps remain in enforcing mandatory cooling standards and fostering urban cooling through NbS – the current building code does not necessarily include sufficient energy-efficiency regulations. Moreover, existing zonal and master planning frameworks in all three countries often fail to protect and integrate green and blue infrastructure, leading to unplanned densification, urban heat island effects, and increased cooling demand. Weak coordination among government agencies, limited regulatory incentives, and resistance from building developers further exacerbate these challenges, resulting in suboptimal urban development, increased energy consumption, and heightened vulnerability to heat-related impacts.

3.2.1 Poor green infrastructure and energy efficiency considerations in urban planning.

Rapid urbanization and informal densification often occur without consideration for energy planning, passive cooling solutions, or NbS integration. In many cities, new buildings are developed with minimal space for green infrastructure, leading to highly compacted, heat-intensive environments that exacerbate the UHIE. This lack of forward-thinking urban design not only increases thermal discomfort in buildings but also diminishes the efficiency of mechanical cooling solutions, placing greater stress on energy systems. The absence of robust urban planning frameworks and enforcement mechanisms further perpetuates the reliance on conventional, carbon-intensive cooling technologies rather than sustainable, climate-adaptive strategies.

3.2.2 Absence of a mandatory and standardized Green Energy Certification and Cooling Labelling Scheme.

A lack of mandatory green energy certifications and cooling efficiency labelling systems prevents the widespread adoption of energy-efficient and climate-adaptive building designs. Without incentives or requirements for developers to incorporate NbS or passive cooling strategies, there is little motivation for private-sector investment in sustainable infrastructure. The absence of performance-based building certifications that account for energy efficiency, cooling demand reduction, and NbS integration limits the development of market-driven solutions that could scale up sustainable urban cooling practices.

A3.3. Barrier 3: Limited business models and financial mechanisms for scaling NbS.

Despite the well-documented benefits of NbS for urban cooling, investment in these strategies remains critically low. Cities in developing countries allocate less than 0.3% of their infrastructure budgets to NbS, while globally, only 5% of the

necessary investment has been mobilized over the last decade to meet climate, biodiversity, and pollution objectives. This severe funding gap is the result of limited financial commitments from national and municipal governments, insufficient mobilization of private capital, and the absence of viable business models to attract long-term investment. In Brazil, while policies such as the PNMC and PCVR promote sustainability, they lack specific financial instruments for scaling NbS. Similarly, in Côte d'Ivoire, despite initiatives like the PNAEE, financing mechanisms to support cooling-specific NbS are underdeveloped. In Cambodia, although the National Cooling Action Plan (NCAP) and National Energy Efficiency Policy 2022 emphasize energy efficiency, they fall short in mobilizing private sector investment for NbS. The absence of structured financial incentives, high upfront costs, and fragmented funding efforts hinder the large-scale adoption of NbS for urban cooling.

3.3.1 Limited dedicated funding and accessibility for NbS, including constraints in international climate finance and national/local budgets.

Decision-makers often overlook the long-term financial benefits of NbS, such as reduced energy demand, improved public health, and climate resilience, due to a lack of integration into cost-benefit analyses. As the result, there is low prioritization in government budgets and competing priorities such as basic infrastructure, healthcare, and education, resulting in conventional infrastructure projects such as roads, housing, and energy systems receive the bulk of funding. Furthermore, the lack of joint budgeting between ministries responsible for energy, environment, and urban planning also results in fragmented funding efforts, reducing the financial viability of large-scale NbS implementation. As the result, limited public funding is allocated for NbS initiatives, particularly in rapidly growing cities where infrastructure needs are urgent.

3.3.2 High up-front costs for NbS for cooling at scale.

A significant barrier to mainstreaming NbS for urban cooling is the high initial investment required, particularly when implementing NbS at city-wide or district levels. Many NbS, such as urban reforestation, green roofs, and water-based cooling solutions, require significant upfront capital before their long-term benefits, such as lower energy demand, improved resilience, and public health improvements, can be realized.

3.3.3 Limited availability of Business Models and Financial Mechanisms to attract Private Investment.

Mobilizing private and institutional investment in NbS is hindered by the perception that these solutions lack clear revenue streams or predictable financial returns. Investors and international financial institutions (IFIs) often view NbS projects as high-risk, low-profit ventures, particularly in the urban cooling sector where benefits such as temperature reduction, energy savings, and improved air quality are widely distributed and difficult to monetize directly.

This challenge is further compounded by the absence of structured regulatory and financing incentives, such as floor area ratio (FAR) bonuses, expediting for green-certified projects, green bonds, carbon market mechanisms, and performance-based incentives that could make NbS investments more attractive. Without dedicated financial instruments and incentive structures, private sector participation remains limited, and NbS continue to be sidelined in favor of conventional built infrastructure.

A3.4. Barrier 4: Low Technical and Institutional Capacity for NbS Integration in Urban Planning and Building Design.

The integration of NbS into urban planning and building design is often challenging due to insufficient technical expertise. Policymakers, urban planners, and developers often lack the capacity to evaluate, implement, and monitor NbS strategies, leading to conventional infrastructure development that exacerbates UHIE and increases cooling energy demand.

Baseline assessments reveal that while numerous policies and frameworks aim to enhance climate resilience and sustainable urban development, they often lack practical guidance and capacity-building components for integrating NbS. For instance, existing policies primarily focus on mitigation and adaptation but seldom address the technical competencies needed to design and maintain NbS at scale. This gap results in weak implementation, poor cross-sectoral coordination, and missed opportunities to leverage urban greening and passive cooling measures, as cities struggle to mainstream NbS into urban resilience strategies without targeted capacity-building and training for government staff, urban and building planners, and other relevant stakeholders.

3.4.1 Lack of capacity to among design professionals, such as Urban Planners, Architects, and Developers.

A key limitation in the widespread adoption of NbS is the lack of training and technical knowledge among design professionals, policymakers, and developers. Many urban planners and architects have limited exposure to NbS principles, passive cooling strategies, or integrated urban greening approaches, leading to a continued reliance on conventional building materials and design that increase cooling demand. Additionally, there is a lack of cross-disciplinary education and professional development programs that equip policymakers and designers with the necessary skills to incorporate NbS into zoning regulations, building codes, and urban master plans. As a result, green spaces, water retention features, and bioclimatic design principles are frequently excluded from large-scale urban developments, reducing their potential to enhance urban cooling and resilience.

3.4.2 Absence of institutional processes for incorporating, reviewing and/or approving NbS in building permits and procurement.

Even when developers propose green buildings or NbS-integrated projects, there is often no structured permit review process to assess these elements within building applications. Many urban planning offices lack the institutional mechanisms, expertise, or personnel to evaluate NbS designs, review green building plans, or ensure compliance with sustainability standards. Moreover, the absence of a strong enforcement mechanism, such as penalties for non-compliance, incentives for compliance, or ongoing monitoring of NbS performance, means that even when NbS-friendly policies exist, their adoption remains voluntary or inconsistent.

3.4.3 Limited inclusion of women and gender-sensitive approaches in urban cooling governance.

Gender norms, underrepresentation of women in technical roles, and limited institutional capacity to incorporate gender-responsive approaches undermine the equitable integration of NbS into urban planning. Women are disproportionately affected by heat, but are often excluded from urban planning, climate policy discussions, and technical decision-making processes. There is limited investment in building the capacity of female professionals in urban planning, green infrastructure or building design, and a lack of institutional mechanisms to ensure that women's voices are represented in urban governance. Strengthening gender-sensitive training, inclusive planning practices and cross-sectoral collaboration is essential to ensure that NbS interventions address the needs of all vulnerable groups and avoid reinforcing existing inequalities.

A3.5. Barrier 5: Insufficient Data, Monitoring Frameworks, and Performance Metrics.

A major challenge in implementing and scaling up NbS for urban cooling and energy efficiency is the lack of comprehensive data, monitoring framework, and performance metrics to guide decision-making. Additionally, existing global tools (see Section A.2) often focus on identifying urban surface temperatures without providing integrated analysis of cooling energy demand impacts, CO₂ emissions reduction, or financial trade-offs related to NbS interventions. This limitation leaves local governments without the necessary strategic insights to make data-driven decisions, particularly when considering the long-term viability and economic implications of cooling solutions. Moreover, the absence of regional and national impact analyses means that policymakers struggle to prioritize projects, identify suitable plant species for urban greening, and develop tailored NbS strategies that align with local contexts. Current tools also lack the capacity to

assess the socio-economic implications of cooling interventions, particularly for vulnerable groups, resulting in gaps in inclusive and equitable planning.

3.5.1 Lack of User-Friendly tools to quantify NbS benefits.

Key stakeholders lack practical, easy-to-use tools for quantifying the cooling, energy efficiency, and climate resilience benefits of NbS. While advanced models exist, they often require specialized knowledge, complex datasets, or technical expertise, making them inaccessible for city officials, architects, and local developers. The absence of integrated, city-scale NbS assessment tools hinder planners' ability to incorporate urban greening into master plans, evaluate the return on investment of cooling interventions, or advocate for NbS-based policies with clear, data-driven justifications. Additionally, urban cooling benefits are often not well understood in financial and policy contexts, making it difficult to translate NbS outcomes into tangible metrics that support funding applications or regulatory mandates. This lack of evidence-based decision-making reduces the prioritization of NbS in urban projects and results in continued reliance on mechanical cooling and conventional infrastructure.

3.5.2 Absence of comprehensive building stock and geospatial data.

A major obstacle is the lack of accurate and up-to-date data on building stock, urban land use, and environmental conditions. Many cities do not have centralized records of building permits, energy consumption patterns, or thermal performance data, making it difficult to assess cooling needs, identify opportunities for retrofitting, or integrate green infrastructure into urban developments. Similarly, high-resolution geospatial data, critical for identifying optimal locations for NbS, monitoring urban vegetation, and assessing microclimate variations, is often unavailable or inaccessible to local authorities.

A3.6. Barrier 6: Limited Awareness of the Effectiveness of NbS for Cooling.

Limited awareness of the effectiveness of NbS for cooling is a key barrier to their large-scale adoption, as demonstrated by the lack of integration into national frameworks and urban planning strategies observed in the baseline assessments. Despite the existence of policies and programs aimed at climate resilience and energy efficiency, such as national adaptation plans and cooling action frameworks, there is insufficient recognition of the role of NbS in mitigating urban heat island effects and reducing cooling demand. This lack of awareness among policymakers, urban planners, and developers is compounded by the absence of proof-of-concept demonstrations and robust evidence on the cooling benefits of NbS, leading to hesitancy in funding and prioritizing such interventions. Consequently, urban cooling solutions continue to rely on conventional infrastructure rather than leveraging nature-based approaches.

3.6.1 Knowledge gaps on the effectiveness of NbS for Cooling and Energy Efficiency

Many urban planners, policymakers, and private sector actors lack a comprehensive understanding of how NbS contribute to cooling and energy savings in cities and buildings. While NbS strategies such as tree planting, green roofs, permeable surfaces, and water-based cooling are well-documented in scientific literature, their practical application in urban planning and infrastructure projects is not well understood by decision-makers. Additionally, many professionals are unfamiliar with how NbS interact with other energy planning strategies to mitigate extreme heat and reduce cooling energy demand. This lack of knowledge hinders the integration of NbS into climate resilience plans, leading to an over-reliance on energy-intensive cooling systems that exacerbate urban heat stress rather than addressing its root causes. Without widespread awareness and technical guidance, urban planners continue to miss opportunities to design cities that naturally regulate temperature and reduce cooling needs.

3.6.2 Weak understanding of the link between Nature Protection and Urban Heat Mitigation

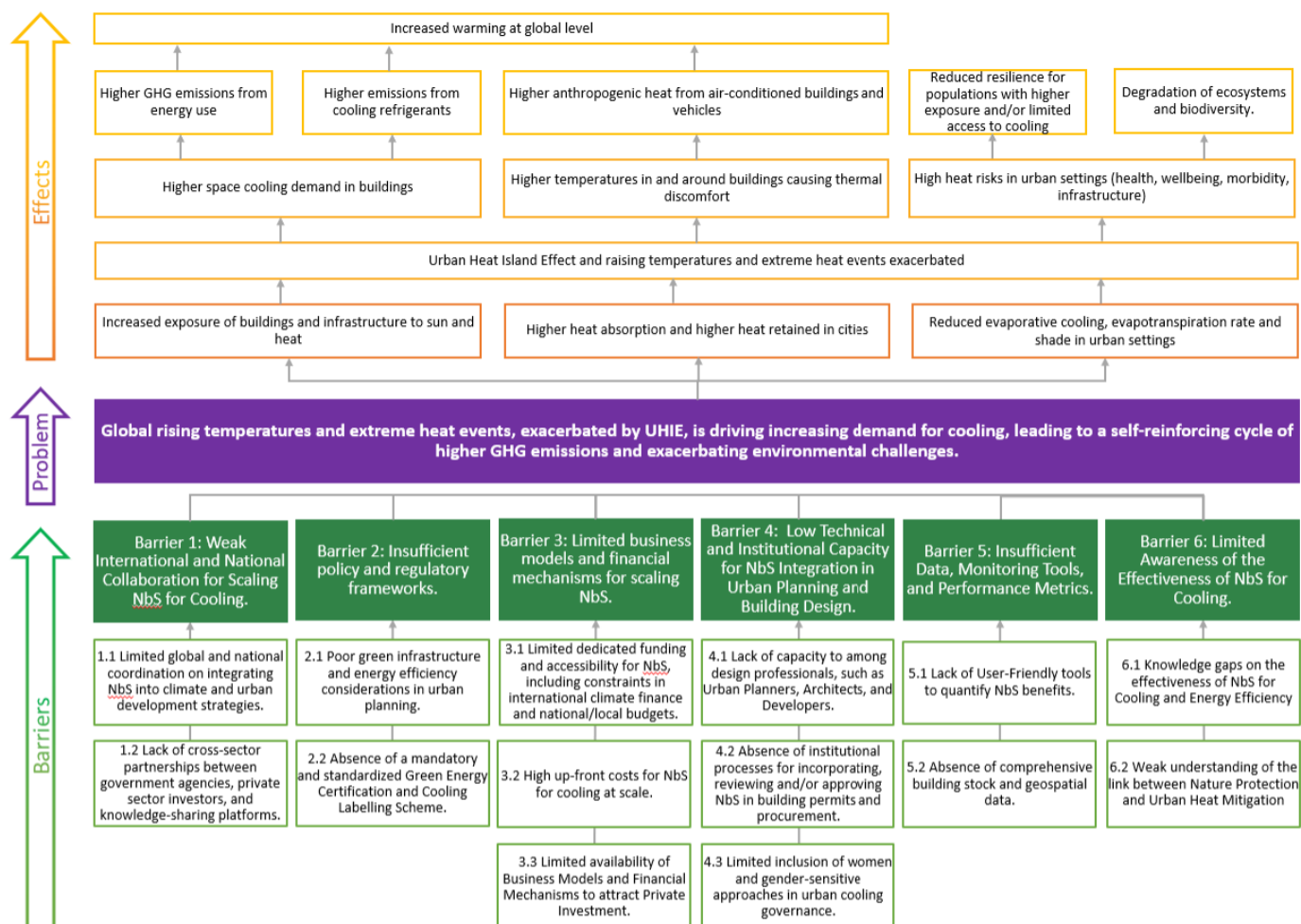
There is a general lack of recognition among urban stakeholders of the critical role that protecting and restoring natural ecosystems in and around cities plays in reducing UHIE and improving building thermal comfort. Natural cooling processes such as shading, evapotranspiration, and increased surface reflectivity from trees, water bodies, and vegetative cover are often overlooked in favor of conventional urban development projects that prioritize built infrastructure over ecological preservation.

A3.7. Problem tree

In the face of rising global temperatures, there is an increased reliance on active cooling systems such as air conditioning. This growing dependence is exacerbated by extreme heat events, which not only raise the demand for energy but also amplify GHG emissions due to the widespread use of fossil fuels for power generation. As emissions rise, they contribute to the greenhouse effect, accelerating global warming and leading to more frequent and severe heatwaves. This central problem is not merely a consequence of natural climatic variations but is significantly influenced by human activities and urban development patterns. The interconnectedness of these elements creates a complex web of contributing factors and cascading effects, which the problem tree will unravel.

The barriers and root causes are interrelated and self-reinforcing, meaning that addressing one of the causes in isolation while ignoring the others would be ineffective. These are presented in the Problem Tree Figure 4 below.

Figure 4: Problem tree



A4. Project objective

To address the adverse effects of rising GHG emissions exacerbated by the UHIE and global temperatures, the primary objective of this project is to foster global and local partnerships, while enhancing the knowledge and capacity of public and private stakeholders to accelerate the adoption, scale-up, and investment in NbS for cooling and addressing extreme heat through the Nature for Cooling Challenge, ultimately leading to GHG emission reduction in the built environment.

By focusing on mitigation through collaborative action, the project aims to reduce dependence on energy-intensive cooling systems, thereby enhancing energy efficiency, lowering cooling demand, and reducing ambient heat levels in urban and building environments. Strategic partnerships between governments, private sector actors, financial institutions, and technical experts will drive the scaling and integration of NbS for cooling, ensuring that solutions are widely adopted, financially supported, and effectively implemented. A core aspect of the initiative is the incorporation of NbS for cooling into urban planning and development strategies, particularly in developing countries, where coordinated efforts between public and private stakeholders can help mobilize investments, share technical expertise, and strengthen policy frameworks.

To complement the primary objective of fostering global and local partnerships, the project will pursue the following secondary objectives. These objectives are designed to support the overarching goal by addressing key barriers and establishing a comprehensive framework for implementing and expanding NbS for cooling in the built environment, ultimately contributing to GHG emission reduction.

- **Building Capacity for NbS Implementation and government coordination:** the project will focus on enhancing the capacity of design professionals, policymakers, and government agencies to incorporate NbS into city master plans and building designs. This involves providing targeted training and resources to improve understanding of the benefits of NbS and strategies for effective integration into urban planning and building design processes. Additionally, the project will work to strengthen coordination among various government departments and levels of administration to ensure a unified approach to implementing NbS. By bridging knowledge gaps and fostering expertise across sectors, the project aims to support the development of more sustainable and resilient built environments, while also ensuring that government bodies work collaboratively to streamline and enforce NbS integration.
- **Demonstrating cooling effectiveness and developing Sustainable Financing Models:** to overcome the financial barriers associated with the adoption of NbS for cooling, the project will provide grants for the implementation of the deep-dive selected proposals and support the development of the procurement process. A key component of this approach is demonstrating these solutions as a proof of concept, to demonstrate the benefits of NbS for cooling. By showcasing tangible results and the financial viability of NbS, the project aims to attract investment and secure long-term funding, ensuring the replication and scaling of successful cooling strategies in diverse urban and building settings.
- **Enhancing NbS Urban Planning and building design and Policy Integration:** to address the insufficient policies and frameworks for addressing rising cooling demands, the project will focus on developing and promoting comprehensive procurement and urban planning guidelines that integrate NbS specifically for cooling emissions mitigation. By incorporating NbS into these frameworks, such as expanding green infrastructure and increasing building vegetation, the project aims to reduce reliance on energy-intensive cooling systems.
- **Expanding Data and Tools for NbS:** Addressing the gaps in data and tools, the project will aim to improve the availability of comprehensive information on the effectiveness of NbS for cooling. This includes developing and disseminating knowledge products and user-friendly tool for quantifying the benefits of NbS and integrating them into urban planning and building design. The project will also focus on raising awareness of the link between nature protection and space heat mitigation, ensuring that stakeholders understand the critical role of natural ecosystems in reducing temperatures and enhancing urban and building resilience.

^[1] High-impact countries are those expected to experience sustained high temperatures, which also have significant populations at high risk from a lack of access to cooling due to poverty and electricity access gaps.

^[2] See more details in Annex K.

^[3] See more details in Annex K

^[4] To give a perspective, the per capita green space in Dutch cities is 228 m² and in Paris is 80 m².

[5] See more details in Annex K.

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

B1. Overview

B1.1. Introduction

The Nature for Cooling Challenge will aim to achieve its objective (see section A4) through GEF-financed activities that build upon the project baseline (section A2) and address key barriers (section A3) to achieve four direct outcomes^[1]:

- **Component 1: Global partnership and knowledge**

This component focuses on advancing global collaboration to enhance NbS for cooling markets through the launch of the NCC. Developed under the UNEP-led Cool Coalition, the project will establish the Nature for Cooling Working Group (NCWG) that will coordinate international engagement, foster innovation, and support knowledge exchange across regions. The NCWG facilitates partnerships, knowledge dissemination, and capacity-building, aiming to scale NbS adoption in urban areas while raising ambition and creating proof-of-concept for broader market shifts.

- **Component 2: Technical assistance and capacity building**

This component aims to enhance local capacity and technical expertise to implement NbS for cooling in urban areas. The component will include design and implementation of the "Nature for Cooling Challenge" that acts as both a competitive grant mechanism and a platform to support cities in Brazil, Cambodia, and Côte d'Ivoire in meeting their subnational commitments under the Global Cooling Pledge. The initiative builds on prior efforts, such as the publication of *Beating the Heat: A Sustainable Cooling Handbook for Cities* (UNEP, 2021) and the collection of case studies on NbS implementation, providing a foundation for knowledge-sharing and innovation. It will focus on the twelve proponents selected for the NCC: three (3) proponents selected for the deep-dive support and nine (9) selected for light-touch support. These proponents are sub-national governments and if necessary they can collaborate with other stakeholders such as private sector entities, civil society organizations, or local governments, forming a consortium. While the final selection criteria will be developed during project implementation, Annex N presents a preliminary overview of the key characteristics that will guide the selection of both deep-dive and light-touch proponents, including their level of advancement. By supporting high-impact installations of green and blue infrastructure, the Challenge seeks to accelerate a transformational shift towards GHG emissions reduction from cooling and improving urban populations' heat resilience. It promotes the adoption of comprehensive approaches to sustainable cooling that integrate NbS interventions within broader urban cooling

strategies. This outcome also aligns with global initiatives, contributing to commitments on sustainable cooling under COP28 and advancing the objectives of the UN Decade on Ecosystem Restoration (2021-2030). Through targeted training, co-development of inclusive projects, and support in mobilizing financing, the Challenge empowers cities to deliver tangible cooling benefits while building the foundation for long-term resilience..

- **Component 3: Deep dive implementation and investment support**

Component 3 emphasizes creating enabling environments at the local level to integrate NbS for cooling into urban planning and building practices, focusing on the three proponents selected for the deep-dive support. The selected proponents will lead the implementation of projects supported by technical guidance, design specifications, and monitoring frameworks. The aim is to institutionalize NbS practices, enhance resilience to heat stress, and establish policies and incentives to scale their adoption in urban areas.

- **Component 4: National enabling conditions.**

This component focuses on equipping national and subnational governments with a tool and strategies to scale NbS for cooling. It integrates NbS into climate and urban development plans through capacity-building, tailored resources, and policy recommendations . It aims to establish multi-stakeholder platforms in Brazil, Cambodia, and Côte d'Ivoire to foster cross-sectoral collaboration, inform policy updates, and integrate NbS into national strategies like NDCs and NBSAPs. Additionally, it develops procurement guidelines and policy instruments to streamline NbS adoption in urban planning and building design, ensuring governments have the necessary frameworks, technical specifications, and best practices to drive effective implementation and investment in NbS for cooling.

The NCC project will draw extensively on the experiences, results, and lessons learned from the GEF Sustainable Cities Impact Programme and its Global Coordination Projects spanning GEF-6 to GEF-8, which have broadly explored the use of Nature-based Solutions (NbS) to mitigate extreme heat. Building on this foundation, the project will actively share its lessons and outcomes through the relevant outreach mechanisms of GEF-7 and GEF-8, facilitating knowledge exchange and cross-fertilization among stakeholders. In doing so, it will not only strengthen current understanding and implementation of NbS for in urban context but also lay the groundwork for more ambitious and comprehensive projects under upcoming GEF funding cycles.

B1.2. Socio-economic benefits

Implementation of NbS for cooling in the challenge winning cities will reduce extreme heat in identified hot spots of cities and provide natural cooling to the urban poor, who otherwise lack access to mechanical space cooling. Thus, NbS provide several socioeconomic benefits like providing cooling needs equitably and sustainably, reduced health related illness due to exposure to extreme heat, reduced mortality rates, improved health and productivity rates.

Areas in a city experiencing UHIE are more vulnerable during heat waves in summer months. Cooling provided by NbS reduces the disaster risk, brings back the lost biodiversity in cities and contributes towards making heat resilient cities. Implementation of NbS also helps in reducing the risk of floods in cities. Benefits of reduced cooling energy demand and hence GHG savings in challenge winning cities shall contribute directly towards global environmental benefits. These have been quantified in the core indicators section.

B1.3. Project cost-effectiveness

The project is cost-effective for several reasons. Firstly, it is anchored in an existing global coordination platform—the UNEP-led Cool Coalition—which works with both national and subnational governments to advance sustainable cooling solutions. As a major player in the field, the Cool Coalition serves as the primary implementation platform for the Cooling Pledge. The project will leverage the Coalition’s extensive network of government agencies, private sector partners, and development organizations to maximize synergies with ongoing initiatives and avoid duplication of efforts. Secondly, the project will benefit from the grounded knowledge and capacity of local implementing partners in Brazil, Cambodia and Côte d’Ivoire. By working with established stakeholders in these countries, the initiative ensures that interventions are context-specific, locally led, and effectively integrated into national and subnational policies. Thirdly, the Challenge will invite proponents to provide co-financing, ensuring that the project’s support is aligned with existing efforts. This co-financing mechanism enhances cost-effectiveness by mobilizing additional resources and strengthening ownership among participating stakeholders.

B1.4. Long-term sustainability

The project’s sustainability strategy relies on the establishment of a Nature for Cooling Working Group (NCWG), which will remain operational under the auspices of the Cool Coalition beyond the project’s duration. The Cool Coalition was launched in 2019 by the Executive Office of the Secretary-General for the UN Climate Action Summit in New York. Since then, it has served as a global advocate for sustainable cooling, and now includes 72 country members and 145 non-government stakeholders worldwide. The Secretariat is funded by a range of donors such as governments, climate foundations and private sector. In addition, its members bring diverse expertise across policy, finance and science/technology, enabling the Coalition to address the comprehensive needs in the cooling sector sustainably. The Nature for Cooling Working Group (NCWG) will serve as a platform for ongoing collaboration, knowledge exchange, and capacity-building, ensuring that key stakeholders continue to advance advocacy for nature-based cooling solutions at the global, national, and local levels. Additionally, all materials and resources developed through the project—including guidelines, training materials and policy recommendations—will be permanently hosted on the Cool Coalition’s platform and toolbox. Furthermore, to enhance financial sustainability and scalability of the winning proponents of the challenge, the project will facilitate matchmaking sessions with financial institutions, creating opportunities for winning proponents of the challenge to engage directly with potential investors. These sessions will help bridge the gap between project developers and funding sources, unlocking new investment opportunities and ensuring that these receive the financial backing needed for long-term implementation and replication.

B2. Theory of Change

The Theory of Change (ToC) for the NCC is designed to foster global and local partnerships, while enhancing the knowledge and capacity of public and private stakeholders to accelerate the adoption, scale-up, and investment in NbS for cooling. This, in turn, aims to reduce GHG emissions in the built environment, improve urban resilience to extreme heat, and integrate sustainable cooling strategies into national and local planning frameworks.

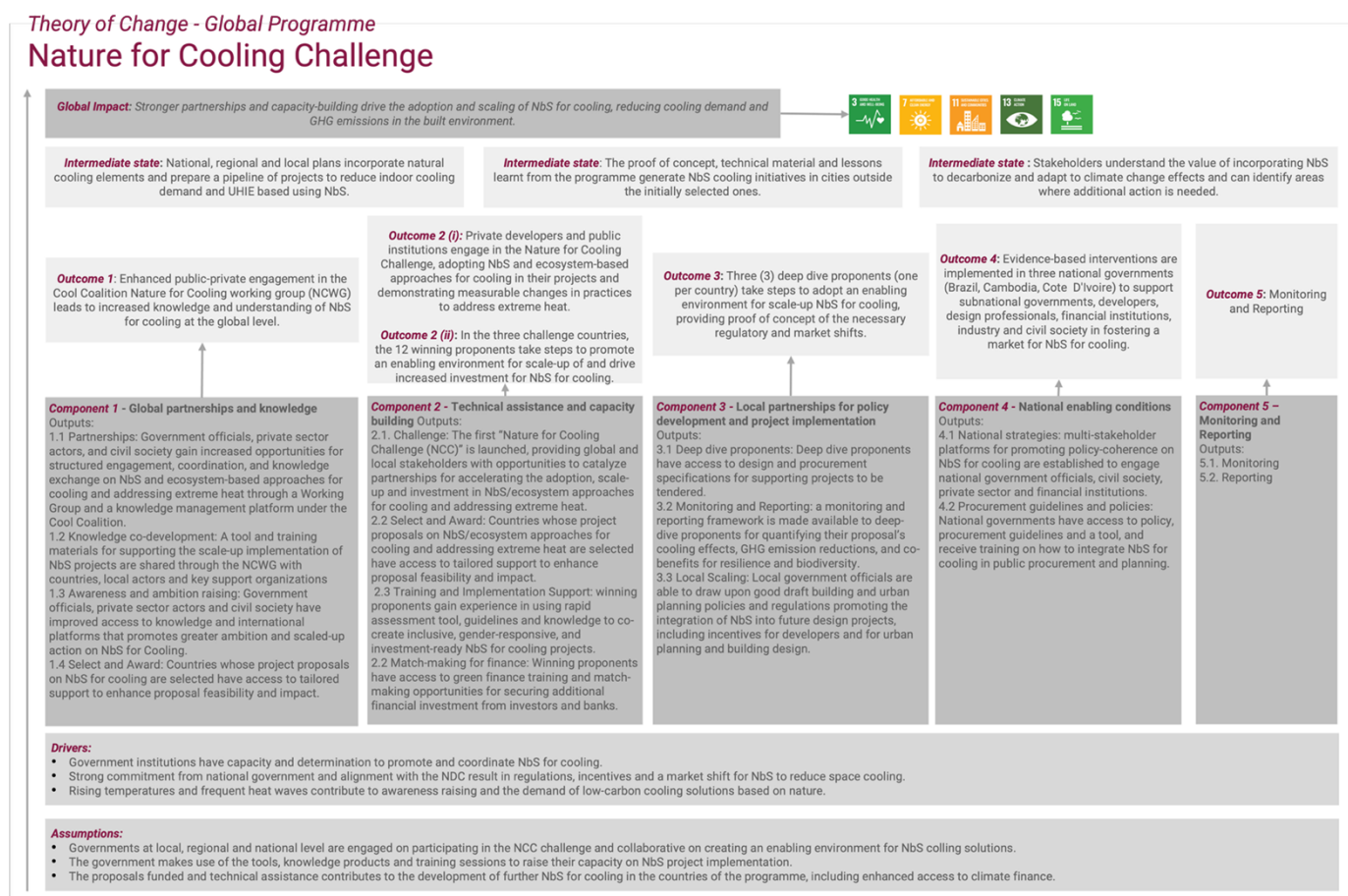
Rapid urbanization, deforestation, and insufficient green infrastructure contribute to the UHIE and rising demand for cooling, exacerbated by climate change. The NCC addresses these challenges by fostering global and local partnerships to promote NbS for cooling as a scalable approach. By bringing together governments, businesses, and civil society, the program provides technical support, policy guidance, and financing pathways to accelerate NbS adoption. It strengthens local capacity through training and technical assistance, helping cities implement green and blue infrastructure that

reduces temperatures, lowers energy demand, and improves urban resilience. To ensure long-term impact, the program works with national and subnational governments to integrate NbS into urban planning and policy frameworks, creating enabling conditions for scaling and replication. Pilot projects in Brazil, Côte d'Ivoire, and Cambodia serve as proof-of-concept, demonstrating the benefits of NbS in reducing reliance on energy-intensive cooling systems while enhancing biodiversity and climate resilience. Through this integrated approach, the NCC aims to create cooler, greener, and more sustainable cities, contributing to national and global climate goals.

In the long term, the ToC envisions a transformative shift toward cities that are cooler, greener, and more liveable. By reducing reliance on energy-intensive artificial cooling, these efforts will also contribute to global climate goals by lowering emissions and enhancing carbon sequestration, with significant benefits to climate resilience and biodiversity conservation. The ToC underscores the need to overcome systemic challenges, such as limited funding, governance gaps, and lack of awareness, to achieve these ambitious goals. By aligning stakeholders and interventions, the program provides a clear and actionable roadmap to tackle urban heat challenges through NbS.

A diagrammatic ToC can be found in Figure 5 below:

Figure 5: Theory of Change



B3. Project elements

This section provides a detailed description of the expected deliverables of the project across the 4 components. The Figure 6 presents a visual overview of the Nature for Cooling Challenge (NCC) implementation process, capturing the logical flow and interconnection of activities across outputs. It highlights how the project will move from initial planning and proposal selection through to capacity strengthening, technical assistance, and policy development, culminating in long-term national impact. The figure also clearly distinguishes between outputs with global relevance and those specifically tied to implementation in the three target countries, including activities that will benefit both the selected Deep Dive and Light Touch proponents. Figure 7 illustrates the distinction between the types of services that light-touch participants and winning proponents will receive through the project.

Figure 6: Project process.

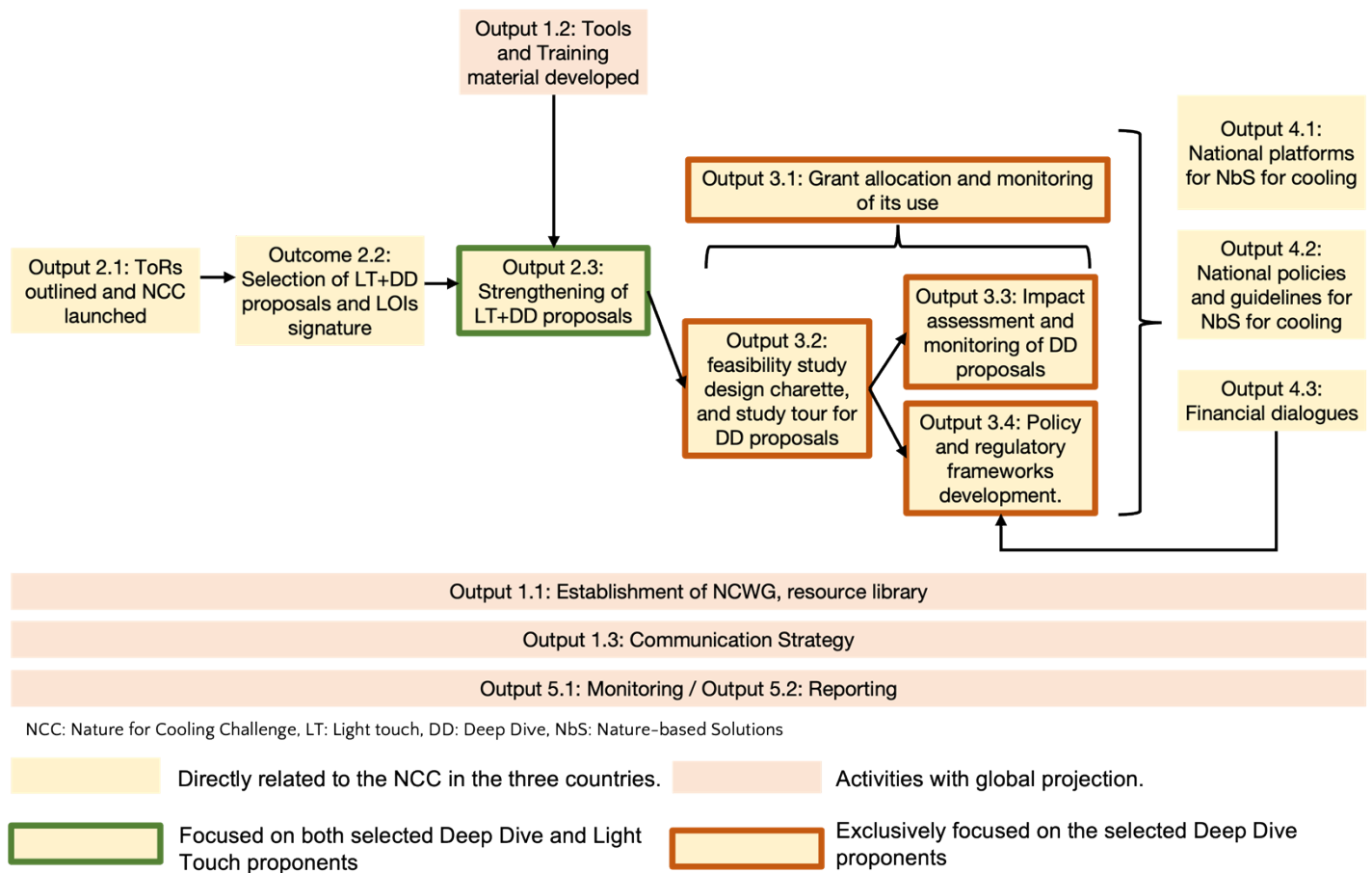
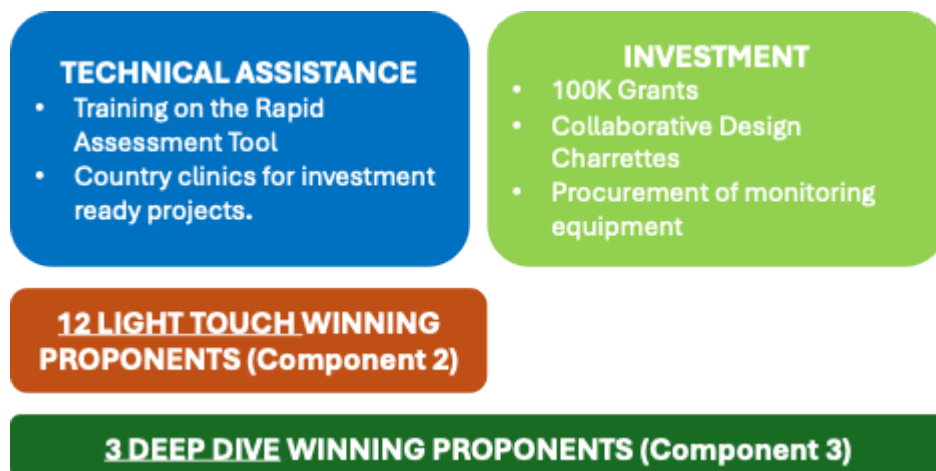


Figure 7: Services provided to Light touch and Deep Dive winning proponents



Component 1 - Global partnerships and knowledge

Barrier addressed: B1. Weak International and National Collaboration for Scaling NbS for Cooling.; B5. Insufficient Data, Monitoring Frameworks, and Performance Metrics.; B6: Limited Awareness of the Effectiveness of NbS for Cooling.

Outcome 1: Enhanced public-private engagement in the Cool Coalition Nature for Cooling working group (NCWG) leads to increased knowledge and understanding of NbS for cooling and addressing extreme heat at the global, national and local level.

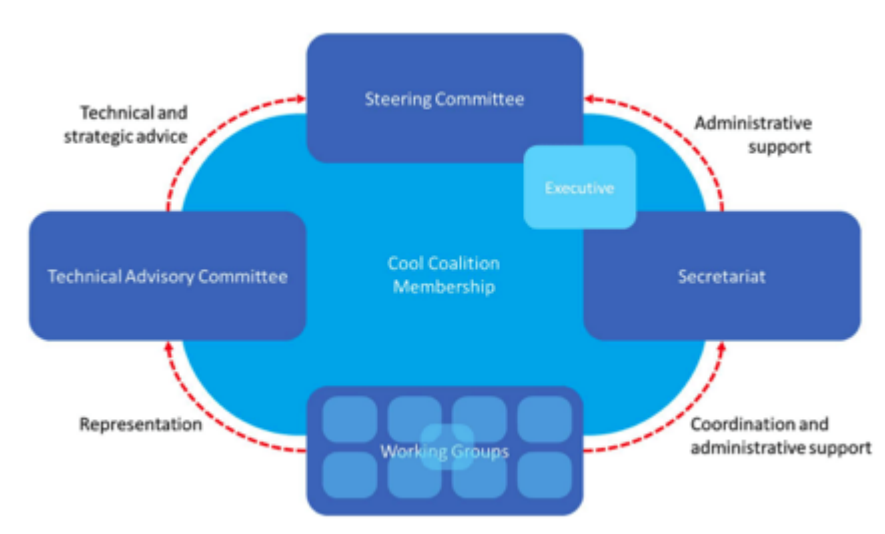
Output 1.1. Partnerships: Government officials, private sector actors, and civil society gain increased opportunities for structured engagement, coordination, and knowledge exchange on NbS for cooling and addressing extreme heat

This output focuses on the creation of two enabling structures to curate and disseminate knowledge globally on NbS for cooling and addressing extreme heat: (i) a knowledge management platform and (ii) a dedicated Nature for Cooling Working Group (NCWG) under the Cool Coalition. To promote knowledge exchange and partnerships, a global knowledge management platform will be developed and hosted within the Cool Coalition website. The platform will serve as a hub for tools, case studies, technical guidelines, and project updates, while also providing a space for community engagement and evidence-sharing. In this way, it will help build a global ecosystem of practice around NbS for cooling. Country-level partnership dialogues will further convene ministries, local governments, financiers, and technical professionals to align efforts and mobilize support.

The NCWG, established under the governance structure of the UNEP-led Cool Coalition, will act as a global convening and technical advisory body. Its creation expands the Coalition's member-led working groups, which currently include areas such as Cooling Refrigeration Emissions and Energy Data (CREED), Communications and Advocacy, Lifecycle Refrigerant Management (LRM), Minimum Energy Performance Standards (MEPS) and Procurement, National Cooling Action Plans (NCAPs), Nationally Determined Contributions (NDCs), Passive Cooling, Private Sector, and Urban Heat Adaptation. The preliminary TORs of the NCWG are presented in Annex N.

The NCWG will engage experts from government, the private sector, academia, and civil society. Collaboration and knowledge exchange will also be pursued with the forthcoming Network of Expertise on Urban Nature-Positive (under the GEF-8 SCIP, led by the World Bank) and with the GEF-7 UrbanShift global program. The group will welcome the participation of the GEF and the World Bank, and will aim to identify knowledge and financing gaps in the cooling sector to inform opportunities for scale-up through upcoming funding cycles.

Figure 8: Governance structure of the Cool Coalition



Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
1.1.1	One (1) project material repository	A dedicated online repository curating project updates, publications, and training materials generated for the project, including gender-sensitive material. During the project inception phase, discussions with GPSC and World Bank will be pursued, in order to explore joint management of an interoperable library/repository as well as opportunities for combining potential technical materials and resources online (as project interventions and scope are further concretized for both the NCC project as well as the GPSC under GEF-8)	Lead: UNEP/SEforALL Key: NCWG, WWF, GPSC World Bank
1.1.2	Nature for Cooling Working group (NCWG) establishment	Two existing working groups under the Cool Coalition – Urban Heat Adaptation Working Group & Passive Cooling Working Group - will establish a joint new NCWG that focuses on NbS for Buildings. UNEP/co-chairs of the existing two WGs will draft a concept note that specify the objectives, governance, outcomes, activities, timelines, etc., and announce to invite all the interested members. Once established, the NCWG will meet remotely monthly to provide advisory support for project activities. The website of the NCWG will be launched under the Cool Coalition website. The NCWG will ensure gender considerations are integrated in NbS projects. During the project inception phase, discussions with GPSC and World Bank will be pursued, and in case a similar working group is planned under Thematic Pillar 1 on Urban Cooling, the NCC project will seek to establish a joint management structure and explore opportunities for combining the various work streams.	Lead: UNEP Key: <u>SEforALL</u>, <u>WWF</u>, <u>GPSC</u> <u>World Bank</u>

Output 1.2: Tools and training materials for supporting the scale-up implementation of NbS for cooling projects are shared through the NCWG with countries, local actors and key support organizations.

This output ensures that tools, guidance and training materials are made available including a Rapid Assessment Tool, a Framework for NbS impact quantification and a global guideline on investment ready NbS projects and gender mainstreaming.

The Rapid Assessment Tool will draw on UNEP's Beat the Heat Handbook (UNEP, 2021), G20 reports on cities and NbS, and contributions from partners such as Naturvation and Durham University. It will help local governments identify urban heat hotspots, assess the feasibility of NbS, and compare Business-as-Usual (BAU) scenarios with intervention scenarios by analyzing climate conditions, land use potential, and urban cooling impacts. Unlike existing global tools that primarily focus on urban surface temperature identification, the tool will provide strategic insights, including projected temperature reductions, cooling energy demand impacts, CO₂ emissions reduction post-NbS implementation, and financial trade-offs between incremental construction costs and operational energy savings. It will incorporate gender-responsive features to ensure inclusivity and address the needs of vulnerable groups.

The development of the tool will be carried out in collaboration with existing international partners, including the private sector, engaging with IT companies and agencies to leverage in-kind co-finance. The tool will be made widely available beyond the selected proponents of the Challenge. After its initial completion, selected proponents will have exclusive access to test the tool before it is more broadly released (output 2.1). They will use the tool to analyze not only urban heat hotspots and surface temperatures, but also the potential impact to the reduction of cooling demands and GHG emissions including saving cost impact post NbS implementation, and strategize NbS in their project sites. The project will also develop structured training materials to support the use of the Rapid Assessment Tool. Efforts will be made to integrate these training materials into existing training sessions for design professionals, led by the relevant stakeholders presented in the table below. Additionally, these stakeholders will contribute to the production of a user-friendly guide to promote the adoption and dissemination of the tool's methodologies across different countries.

The Framework for NbS impact quantification will be developed to assess the full range of benefits from Nature-based Solutions (NbS) for cooling, including climate mitigation, adaptation, cost savings, and ecosystem co-benefits. It will also include guidelines for the installation and use of equipment, such as sensors, to measure temperature, humidity, and other environmental variables.

All of these tools will be made available through the resource library Deliverable 1.1.1) and the Global Platform for Sustainable Cities (GPSC), coordinated by the World Bank, as a means to increase their use and reach among interested stakeholders.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
1.2.1	One (1) Rapid Assessment Tool	A Rapid Assessment Tool, co-created with stakeholders, to quantify the benefits of NbS for cooling, including the estimation saving energy costs versus upfront costs. The tool integrates GIS-based hotspot mapping, projections for temperature reduction and GHG mitigation, and cost analysis for implementation. The tool will be made accessible to a broader audience through a dedicated online repository.	Lead: UNEP/ SEforALL Key: Naturvation/ Durham University + IT company (tbd)

1.2.2	Three (3) Structured Training Materials for NbS implementation	Comprehensive training materials to facilitate the use of the rapid assessment tool and other methodologies for NbS project planning and scaling. These materials include user guides, practical case examples, and capacity-building exercises. All materials will reflect gender-sensitive language. The training will be made accessible to a broader audience through a dedicated online repository.	Lead: UNEP/ SEforALL Key: Natuvation/ Durham University + IT company (td),
1.2.3.	One (1) Framework for NbS impact quantification	A framework will be designed to quantify the cooling effects, GHG mitigation, saving energy costs versus upfront costs and co-benefits for resilience and biodiversity from NbS. This framework will include specific indicators to evaluate the net positive benefits for mitigation, adaptation, and ecosystem services, serving as the foundation for data collection, analysis, and reporting on project impacts.	Lead: UNEP Key: WRI, GlobalABC, NCWG
1.2.4	One (1) set of guidelines on NbS financial incentive programme	A detailed set of guidelines will be developedA detailed set of guidelines will be developed to introduce real estate developers and government officials to financial incentive programmes to scale up NbS. The guidelines will describe the principles of such as Floor Area Ratio (FAR) bonus programme that can sustain both green development and real estate revenues and cost saving. Additionally the guidelines introduce case studies from developed countries who are leading in these financial schemes, and how effectively they can be incorporated in building code or other relevant regulations.	Lead: UNEP/ SEforALL Key: Naturvation/ Durham University + IT company (TBD)
1.2.5	One (1) set of guidelines on mainstreaming gender in NbS for cooling	A comprehensive guidance on mainstreaming in NbS for cooling will be developed by the GESI Expert to promote the integration of gender-responsive approaches in NbS cooling projects. The guideline will outline strategies to promote gender equality and inclusion across all stages of project design, implementation, and monitoring. It will provide practical recommendations for identifying and addressing gender-specific needs, enhancing women's participation in decision-making processes, and ensuring equitable access to the benefits of NbS interventions.	Lead: UNEP

Output 1.3: Awareness and ambition raising: Government officials, private sector actors and civil society have improved access to knowledge and international platforms that promote greater ambition and scaled-up action on NbS for cooling and addressing extreme heat.

This output prioritizes outreach and engagement to increase awareness and action on NbS for cooling. Efforts will use online and face-to-face channels, including city networks, virtual meetings and events, to inform and engage with not only project stakeholders but also global ones, leveraging on UNEP and SEforALL's on-the-ground presence, along with existing initiatives such as UrbanShift and the GPSC. Webinars will target diverse audiences, ensuring the inclusion of women's groups and vulnerable communities. Communication strategies will include updating the NCC page on the Cool Coalition website, promoting sustainable cooling solutions on UNEP platforms, and developing a social media toolkit with infographics, success stories, and other high-quality content. Gender-responsive approaches will guide language, imagery and content development to ensure balanced representation and avoid stereotypes.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
1.3.1	One (1) Gender-Responsive Global Communication and Engagement Strategy	A comprehensive gender-responsive strategy will be designed to enhance global outreach and engagement on NbS for cooling. Includes all outreach and communications, brand identity, and thematic messaging, as well as campaigns and activities such as social media outreach (including media templates, reels, podcasts, and brochures).	Lead: UNEP Key: NCWG

1.3.2	Communication and Engagement Strategy execution.	The comprehensive communication strategy will ensure broad consultation with stakeholders across various sectors (governments, NGOs, private sector, etc.) on project deliverables. Key activities include: § At least five (5) communication products, including a diverse set of outreach materials, including digital leaflets, newsletters, and press releases, targeting at key project stakeholders as well as the general public. § At least nine (9) webinars, including interactive online sessions designed to foster dialogue and knowledge sharing among global and local stakeholders, with a specific focus on project-related topics such as NbS implementation, policy alignment, and capacity building. § Social media profiles management and testimonials from pilot projects will also be featured to highlight successes and drive engagement. § Efforts will be made to reach women-led organizations and low-digital access groups through locally adapted content formats. § Other engagement and communication strategies according to the project needs.	Lead: UNEP/ SEforALL Key: NCWG
1.3.3	Six (6) global events participation	Participation of NCWG team members in 1-2 relevant global events per year, for three years, i.e. travel and event logistic costs for high level side events (6 in total) at global fora, e.g. COP and other conferences, including presenting and sharing the project progress, knowledge products and project closure. This also includes the participation in activities organized in the context of the GEF-8 Sustainable Cities Impact Programme.	Lead: UNEP Key: NCWG
1.3.4	Closure event of the Nature for Cooling Challenge	This event will mark the official closure of the project and will bring together representatives from all stakeholders involved, including executing agencies, implementing partners, government officials, and winning proponents, to share experiences, achievements, and lessons learned.	Lead: UNEP Key: CBCS (Brazil) MINEDD (Côte d'Ivoire) MOE (Cambodia)

Component 2 - Technical assistance and capacity building

Barrier addressed: B1: Weak International and National Collaboration for Scaling NbS for Cooling; B4: Low Technical and Institutional Capacity for NbS Integration in Urban Planning and Building Design; B5: Insufficient Data, Monitoring Frameworks, and Performance Metrics.

Outcome 2 (i): Private developers and public institutions engage in the Nature for Cooling Challenge, adopting NbS for cooling in their projects and demonstrating measurable changes in practices to address extreme heat.

Outcome 2 (ii): In the three challenge countries, the 12 winning proponents take steps to promote an enabling environment for scale-up of and drive increased investment in NbS for cooling and addressing extreme heat.

Output 2.1: Challenge: The first “Nature for Cooling Challenge (NCC)” is launched, providing global and local stakeholders with opportunities to catalyze partnerships for accelerating the adoption, scale-up and investment in NbS for cooling and addressing extreme heat.

This output focuses on the design, outreach, application support and selection processes of the Challenge establishing it as both a national and globally oriented initiative. While the Challenge will support in-depth implementation in Brazil, Cambodia and Cote d’Ivoire, targeting outreach to at least sixty urban areas and aiming for twenty proposals per country, it is also structured to generate global visibility, knowledge exchange, and participation from stakeholders in other regions.

All proponents will be required to submit the same level of information and detail in their proposals. Annex N provides an overview of the key eligibility and selection criteria for the proposals to be qualified to participate in the Challenge, which will be further elaborated during project execution. The Challenge will examine experiences from GEF-6 to GEF-8 in applying Nature-based Solutions (NbS) in urban contexts, with the aim of identifying the success factors that can inform potential selection criteria of the challenge. In each participating country, the highest-scoring proponent will be selected for deep-dive support, while the next three highest-scoring proponents will receive light-touch support.

The Nature for Cooling Challenge will use the SCIP Child Project existing institutional arrangements, and networks, to make sure the notification reaches as many eligible proponents as possible in Brazil and Cote d’Ivoire.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
2.1.1	One (1) Nature for Cooling Challenge Framework document	The Terms of Requirement (ToR) will outline comprehensive guidelines, selection criteria, and submission processes for the Nature for Cooling Challenge. This foundational document will provide a clear structure for the Challenge, and it will be developed with input from the NCWG and key stakeholders. Each proposal will clearly delineate a budget and workplan for the execution of the award (100K). It is also expected a minimum investment of co-financing as a pre-requisite to receive the award, if selected. The expected co-financing is in the ratio of 1:6.	Lead: UNEP/ SEforALL Key: NCWG, WWF
2.1.2	Three (3) Partnership Dialogue events in the three participating countries	These dialogues will convene key stakeholders, including ministries, local developers, financiers, architects, and policymakers, in each of the three participating countries. The events will aim to be gender-inclusive and to foster collaboration, build coalitions, partnerships, and strengthen networks essential for implementing and scaling the Nature for Cooling Challenge.	Lead: UNEP/ SEforALL Key: WWF, CBCS (Brazil) MINEDD (Côte d’Ivoire) MOE (Cambodia)
2.1.3	One (1) Official Launch and Call for Proposals event	The official launch of the Nature for Cooling Challenge will mark the opening of a competitive call for proposals. This event will invite project proponents from the three participating countries to submit innovative proposals for NbS for cooling. A total of 12 projects will be selected (Output 1.4) - 3 for deep dive support and 9 for light-touch support). Deliverables under Component 2 will target both sets of proponents, while those under Component 3 will focus exclusively on the deep-dive projects. The outreach and communications of the event will be	Lead: UNEP/ SEforALL Key: WWF, CBCS (Brazil) MINEDD (Côte d’Ivoire)

coordinated by the Global Communication and Engagement Strategy (Output 1.3.1). It will also be used to invite new stakeholder, private sector and technical partners joining the working group for supporting NCC project.

MOE
(Cambodia)

Output 2.2: Select and Award: Countries whose project proposals on NbS for cooling and addressing extreme heat are selected have access to tailored support to enhance proposal feasibility and impact.

This output focuses on the selection and support of project proposals for the NCC. A total of 12 NbS for Cooling project proposals will qualify for the Challenge, with three (3) selected for deep-dive support and nine (9) for light-touch support. Annex N outlines the draft eligibility and selection criteria for the Challenge. The selected proponent for deep-dive support will receive a grant of USD 340,000. These grants will be provided by the project. These partners will operate independently of the evaluation process to avoid any conflict of interest.

The selection process will be managed by the Project Steering Committee and selected partners from the NCWG. An evaluation panel will be formed to finalize the criteria and evaluate the proposals. The evaluation will include gender-responsive criteria and a focus on identifying projects with the highest potential for impact, alignment with GEF and UNEP programs, and inclusiveness. Letters of Interest will be signed with selected proponents to formalize their engagement to the Challenge.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
2.2.1	One (1) Proposals assessment and prioritized list	Proposals will be assessed based on the established selection criteria (output 1.1), resulting in the selection by the NCWG of 3 deep-dive and 9 light-touch projects for support. This deliverable will include a detailed justification for the selections made and recommendations for the next steps in the Nature for Cooling Challenge (see components 2 and 3).	Lead: UNEP, SEforALL Key: WWF, NCWG CBCS (Brazil) MINEDD (Côte d'Ivoire) MOE (Cambodia)
2.2.2	One (1) selection justification and results publication	The results of the proposal selection process will be transparently communicated in written form via the Cool Coalition NCWG platform. A justification for the selection of 3 deep-dive and 9 light-touch projects will be published, aligned with the established criteria. Each proponent, whether selected or not, will receive a formal written notification communicating the decision.	Lead: UNEP, SEforALL Key: WWF, NCWG
2.2.3	Twelve (12) letters of interest (Lols)	A collection of signed Lols from all deep dive and light-touch selected proponents, formalizing their commitment to the Nature for Cooling Challenge. These letters will detail their intent to participate, implement NbS for cooling solutions, and collaborate with stakeholders.	Lead: UNEP Key: Proponents

Output 2.3: Training and Implementation Support: winning proponents gain experience in using the rapid assessment tool, guidelines and knowledge to co-create inclusive, gender-responsive, and investment-ready NbS for cooling projects.

This output focuses on preparing the twelve winning proponents to enhance the technical robustness and investment readiness of their NbS for cooling projects presented to the Challenge. Training sessions will ensure that applicants gain hands-on experience with the rapid assessment tool and supporting guidelines.

Participants will also receive guidance on project planning, including resource allocation, supply chain capacity, implementation timelines and the development of monitoring, reporting and verification systems. The training will emphasize co-creation by facilitating focus group discussions with vulnerable groups such as low-income groups, indigenous peoples, women, youth and children.

In addition to technical training, promoters will be supported to integrate NbS into broader urban frameworks. This includes assessing local policy and investment strategies, reviewing urban master plans, and adapting building codes to support NbS implementation. Gender-responsive approaches will be embedded throughout, ensuring that policy recommendations and project designs take into account the specific needs of vulnerable groups and promote equitable access to shaded common areas

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
2.3.1	Three (3) Country Clinics for robust NbS Project Proposals	Country-specific clinics will be conducted to assess the project site environmental conditions and discuss the potential NbS interventions. This exercise can help winning proponents what aspects they are missing in their site analysis (e.g. temperature range, seasonal variation, wind patterns, humidity level, solar exposure, soil characteristics, topographies, hydrologies, relevant zoning and building codes, native species, wildlife, ecosystem, environmental impact, etc.). This exercise will be conducted before the tool training (2.4.2) in order for the winning proponents to be able to leverage the training with sufficient environmental data on their project site.	Lead: UNEP/SEforALL Key: Winning proponents, NCWG
2.3.2	Three (3) National Training Sessions and hands-on support for Rapid Assessment Tool	Capacity building national hybrid training sessions to proponents to ensure they can effectively apply the Rapid Assessment Tool. This will enable them to exchange experience with other selected proponents, analyse and prioritize NbS opportunities for cooling, enhancing their ability to develop and scale impactful projects. The sessions will be designed to be inclusive and gender-sensitive, ensuring active participation of women professionals and community leaders.	Lead: UNEP/ SEforALL Key: Naturvation/ Durham University + IT company (TBD)

Component 3 - Deep-Dive Implementation and Investment Support.

Barrier addressed: B3: Limited business models and financial mechanisms for scaling NbS; B4: Low Technical and Institutional Capacity for NbS Integration in Urban Planning and Building Design; B5: Insufficient Data, Monitoring Frameworks, and Performance Metrics.

Outcome 3: Three (3) deep dive proponents advance the project design and preparation of NbS for cooling and addressing extreme heat, providing proof of concept for private sector engagement and the enabling regulatory environment needed for implementation.

Output 3.1. Grants: Deep dive proponents have access to targeted grants functioning as catalytic investments to support the implementation NbS for cooling projects

The grants provided for the implementation of the Deep Dive initiatives will be blended with the co-finance requested on the ToRs. Given their long-term role in managing project sites, developers will be central to monitoring and reporting NbS impacts, contributing critical datasets such as energy audits and financial performance indicators. These insights will support policy refinement and strengthen the evidence base for NbS adoption. Their participation is a significant asset to the project, as their properties provide a unique opportunity to demonstrate and scale sustainable urban development. Specifically, the grant will cover the amounts for piloting NbS, which could include the cost for the NbS products (e.g. green walls and roofs, shading tress, etc.), design, construction, and operation, building permit application and inspection, monitoring equipment, etc. To fully prepare, proponents (potentially a developer) are expected to submit the workplan (budget breakdown) of the grant, which is to be assessed by Cool Coalition international and local experts before implementation.

Once the pilots start, proponents are expected to provide progress report that covers the percentage of building completion, building permit-related documents, shop drawings, construction timelines, procurement documents, etc., which is to be evaluated by the aforementioned experts.

Once the pilots are finalized, proponents are expected to submit the report on the impact and lessons learned, where they will report the NbS benefits such as reduced energy consumption, reduced electricity costs, CO2 emissions reduction, achieved thermal comfort, best practices of design/construction/operations of NbS, cost analysis, replicability for other buildings, etc.

All the findings from pilots will be shared with cities and national government as recommendations of introducing NbS into their policies and regulations (urban planning act, building energy codes, green coverage regulations, etc.) as the structured documents, as well as city masterplans for sustainable urban development.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
3.1.1	Workplan on the use of the grant	The workplan includes budget breakdown of NbS solutions (e.g. design/construction/maintenance cost, products cost, permission cost, labor costs, monitoring equipment costs, etc.), design drawings and specification documents for tendering, project timelines, labor organization chart, etc.	Developer, design practitioners,
3.1.2	Progress report on the use of the grant	The progress report includes the documents such as percentage of completion, building permit progress, shop drawings, construction schedule, procurement tracking, etc.	Developer, design practitioners
3.1.3	Impacts and lessons learned document	The impacts and lessons learned document covers comprehensive findings such as reduced energy, electricity bills and corresponding CO2 emission reduction, thermal comfort, best practice of design/construction/operation of NbS, cost analysis, replicability for other buildings, etc.	Developer, design practitioners, cities

The list below illustrates the types of solutions the challenge will consider. The selection of solutions will depend on the building structures and the surrounding landscape proposed by the proponents. In all cases, the grant can cover design, construction, and maintenance fees, the cost of NbS products, building permission fees, monitoring equipment, indirect costs, and other related expenses.

- Green Walls - Vertical surfaces covered with plants, creating living gardens on the sides of buildings or structures. They improve air quality, reduce temperatures, and enhance urban aesthetics.
- Green Roofs - Building roofs partially or fully covered with vegetation. They provide insulation, manage stormwater, and reduce urban heat.
- Tree Planting - Mature tree canopies provide shade to reduce outdoor and indoor temperatures, purify air, and support wildlife habitat.
- Pond Creation - Small contained water features that support aquatic life, provide cooling effects for outdoor and indoor temperatures, manage stormwater runoff, and create habitat for wildlife.

Output 3.2: Deep dive proponents: Deep dive proponents have access to design and procurement specifications for supporting projects to be tendered.

This output builds on the progress achieved under Output 2.2, with a focus on advancing selected proposals by strengthening their impact measurement frameworks—including gender-responsive indicators—and enhancing their investment readiness. It supports the Deep Dive proponents in developing detailed design and procurement specifications that maximize the potential of NbS for cooling. Through pre-feasibility studies, design charrettes and a study tour, deep-dive proponents will collaborate with technical experts and local stakeholders to co-create practical, scalable, and locally adapted project designs. Developers will play a key role, as selected project sites, particularly those incorporating buildings, are often owned or leased by them. During the design phase, developers from winning projects will engage on pre-feasibility studies and design charrettes, where they will receive technical support to enhance design and tender documents, ensuring alignment with green certifications and sustainable procurement standards. These events will also engage private sector design professionals such as architects, engineers, urban planners, contractors, and manufacturers to strengthen NbS integration.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
3.2.1	Three (3) pre-feasibility studies	Support the development of technical and economic pre-feasibility studies for each deep-dive project, focusing on validating the viability of proposed NbS interventions. This includes detailed assessments such as UHIE mapping using satellite imagery and ground measurements, climate data analysis (e.g., temperature projections and frequency of extreme heat events), evaluation of target areas' vulnerability, as well as the potential environmental and social impacts of each project. The studies will also consider local building typologies, baseline cooling energy demand, and other site-specific factors to inform cost-benefit analyses and ensure the proposed solutions are technically sound, economically justified, and context-appropriate.	Lead: UNEP Key: National Research Council Canada
3.2.2	Three (3) Collaborative Design Charrettes for optimizing NbS for cooling projects	Collaborative design charrettes in each focus country to optimize the design of their selected deep-dive NbS cooling projects. These sessions will be delivered by national experts to bring together design professionals (developer, architects, engineers, contractors and manufactures, etc.) and financiers to develop schematic/detailed/tender drawings, specifications, cost estimates, and recommendations, ensuring alignment with green certification standards such as APEX and LEED. Furthermore, the national experts will provide 2-3 follow-up sessions (online or in-person) providing guidance on the design and procurement of the selected proposals. This entails the review of landscape and building drawings (e.g. coverage of green area, distance of trees, etc.) and material specification lists (e.g. species of trees/shrubs/grass), along with the advice of selecting green contractors and suppliers, alternative green	Lead: UNEP Key: SEforALL, UFSC (Brazil) CRAU (Côte d'Ivoire) ITC (Cambodia)

3.2.3 One (1) study tour	materials, alignment with green certifications, cost estimates on green products, etc., to ensure sustainable procurement. A study tour in a leading country on NbS will be organized, including 10 representatives (national/sub-national governments officials, proponents and their key stakeholders, efforts will be made to have a gender parity among the representatives) per country will travel to the country where a leading architectural firm or developer will host the tour by showing them the state-of-the-art NbS projects for their inspiration, as well as global joint workshop where the leading project stories and their methodologies will be discussed. Finally, the tour serves for the participants from the three project countries to exchange their experiences and lesson learnt.	Lead: SEforALL Key: NbS exemplary initiatives
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Output 3.3: Monitoring and Reporting: a monitoring and reporting framework is adopted by deep-dive proponents for quantifying their proposal's cooling effects, GHG emission reductions, and co-benefits for resilience and biodiversity.

This output provides Deep Dive proponents with hands on support in utilizing the framework for NbS impact quantification (output 1.2.3) to assess the performance and impact of NbS for cooling projects. Deep-dive selected proponents will receive training to effectively apply the framework, ensuring that monitoring processes are robust, consistent and gender responsive. The training will focus on building the capacity of local teams to manage data collection, analysis, and reporting, with an emphasis on tracking sex-disaggregated data to promote inclusivity and equal participation in monitoring efforts. Additionally, the framework will help proponents document co-benefits, including improved biodiversity, increased urban green space, and enhanced community resilience.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
3.3.1	Three (3) procurement and installation of monitoring equipment	Monitoring equipment will be procured, installed, and operationalized to establish baselines and enable consistent measurement of the impacts of NbS. This will ensure accurate tracking of cooling effects, GHG mitigation, and other environmental benefits throughout the project lifecycle.	Lead: UNEP Key: UFSC (Brazil) Accueil CRAU (Côte d'Ivoire)
3.3.2	Three (3) training for monitoring framework implementation	Targeted training sessions will be conducted to improve the technical capacity of stakeholders in implementing the monitoring framework. These sessions will include a tool and methodologies for tracking temperature changes, GHG reductions, and biodiversity enhancements.	ITC (Cambodia) Lead: UNEP Key: UFSC (Brazil) CRAU (Côte d'Ivoire) ITC (Cambodia)

Output 3.4: Local Scaling: Local government officials have access to tailored recommendations to promote the integration of NbS into future design projects, including incentives for developers and for urban planning and building design.

This output aims to support local governments in integrating NbS into urban planning and building policies to enable wider scaling and replication of successful projects. The promoters will work closely with local officials to develop policy proposals and regulatory frameworks that incentivize the adoption of NbS for cooling, building on the assessment of deliverable 4.2.2. These proposals will include mechanisms such as tax incentives, grants and public-private partnerships to encourage developers and designers to incorporate NbS into future projects.

Proposals will also be developed to provide local governments and urban planners with NbS design methodologies tailored to their specific contexts. These will include best practices for integrating green and blue infrastructure into urban plans, as well as strategies for aligning NbS projects with climate adaptation and mitigation goals. The proposals will build on the experiences of the GEF-7 and GEF-8 Sustainable Cities Impact Program and its country projects, where the integration of NbS into urban planning has been addressed.

These proposals will build on the lessons learned from the implementation of the pilots (outcome 3.1) to facilitate wider replication and scale-up.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
3.4.1	Three (3) proposals on regulatory and financial incentives for local governments	A proposal outlining mechanisms incentivizing developers to integrate NbS into their projects, such as regulatory incentives (increased floor area ratio, zoning adjustments, green labelling), financial incentives (tax rebates, grants, subsidies, tax credits), capacity and technical support (training, workshops, technical assistance), adjusted to the particular conditions of each country. The regulatory proposals will also address key governance issues, including the fragmentation of responsibilities across government agencies. The proposals will build on an assessment of existing regulatory and financial mechanisms to identify gaps and opportunities. This process will involve mapping current incentives related to urban cooling and green infrastructure, analyzing their effectiveness, and drawing lessons from both successful and underperforming initiatives. A participatory approach will be adopted, involving consultations with local stakeholders, including government representatives, urban planners, developers, and community groups. These engagements will provide insights into existing barriers, successful practices, and opportunities for improving NbS adoption.	Lead: UNEP Key: NCWG, UFSC (Brazil) <u>CRAU</u> (Côte d'Ivoire) ITC (Cambodia)
3.4.2	Three (3) proposals for integrating NbS into Urban Planning, the Urban Built Environment, and buildings Design (one per deep dive proponent)	A set of proposals will be developed at sub national level to provide recommendations for incorporating NbS into urban planning frameworks, including building by-laws and city master plans, including gender-responsive aspects. These guidelines will detail methodologies for NbS implementation in both new developments and retrofitting existing structures, covering aspects such as open spaces, green coverage, green and blue infrastructures, tree specifications, and green roofs.	Lead: Sub-contractors Key: NCWG, UFSC (Brazil) <u>CRAU</u> (Côte d'Ivoire) ITC (Cambodia)

Component 4 - National enabling conditions

Barrier addressed: B1: Weak International and National Collaboration for Scaling NbS for Cooling; B2: Insufficient policy and regulatory frameworks; B4: Low Technical and Institutional Capacity for NbS Integration in Urban Planning and Building Design; B5: Insufficient Data, Monitoring Frameworks, and Performance Metrics.

Outcome 4: Three national governments (Brazil, Cambodia and Côte d'Ivoire) take steps to adopt policies that encourage subnational governments, developers, design professionals, financial institutions, industry and civil society to implement NbS /ecosystem approaches for cooling and addressing extreme heat.

Output 4.1: Multi-stakeholder platforms: multi-stakeholder platforms promoting policy-coherence on NbS/ecosystem approaches for cooling and addressing extreme heat are established to engage national government officials, civil society, private sector and financial institutions.

This output focuses on establishing country platforms to engage national government representatives in understanding and promoting the climate and nature benefits of NbS for cooling. Roundtables and consultations will be organized to bring together key stakeholders, including government, civil society, private sector and financial institutions, to explore how NbS can be integrated into national strategies such as National Determined Contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs) and other relevant policy frameworks. This will also examine ways to address the fragmentation of responsibilities for NbS across different levels of government, recognizing that land, water, and built infrastructure are often managed by multiple agencies. The country platforms will facilitate discussions aimed at strengthening the link between gender equality and the promotion NbS for cooling, with the active involvement of governmental stakeholders responsible for gender affairs.

As part of these discussions, scenario-based assessments will be conducted to provide evidence-based insights into the potential impacts of NbS for cooling on urban heat, GHG emissions, biodiversity and human health. The roundtables will serve as a platform for capacity building and peer learning, ensuring that government representatives are equipped with the knowledge and instruments to advocate for NbS in their national policies.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
4.1.1	Three (3) scenario-based assessment of NbS for cooling	A scenario-based assessment at national level on the potential and costs of NbS for cooling contributing to NDC and NBSAP implementation, as well as implementation of other national strategies (such as job creation, gender policies, etc.).	Lead: UNEP Key: UFSC (Brazil) CRAU (Côte d'Ivoire) ITC (Cambodia)
4.1.2	Three (3) multi-stakeholder and gender-responsive country platforms for cross-sectoral collaboration on NbS	Multi-stakeholder platforms, constituted as NCWG national sub-groups, in each participating country to foster collaboration among national government officials, civil society, private sector and financial institutions. Workshops will be organized to bring the stakeholders together. The focus will be on cross-sectoral collaboration for NbS cooling solutions, creating a space to discuss policy changes, address barriers and challenges, building	Lead: UNEP Key: NCWG

consensus and reviewing and refining procurement guidelines to incorporate NbS in national policies and local contexts. They also facilitate knowledge exchange on best practices, promote support for proposed procurement approaches, and identify pathways for effective implementation and connect with investors. The platforms will engage with existing networks/platforms and leading authorities in each country for partnerships and joint efforts, to ensure continuity after project closure.

Output 4.2: Design/Procurement guidelines and policies: National governments have access to policy, procurement guidelines, and tools and receive training on how to integrate NbS for cooling and addressing extreme heat in public procurement and planning.

This output provides national governments with tailored policy and procurement guidelines to integrate NbS for cooling into their planning and development processes. These guidelines will include technical specifications, best practices and decision-making instruments to streamline the procurement and implementation of NbS at national and sub-national levels. Guidelines will be drawn from the lessons learned from the implementation of the pilots (outcome 3.1) to facilitate wider replication and scale-up.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
4.2.1	Three (3) Procurement Guidelines for NbS in urban/building projects	Comprehensive design/procurement guidelines will be developed and published to support national governments in strengthening their procurement procedures, with a focus on integrating NbS into urban and building projects. These guidelines will include an inventory of commonly used design solutions and best practices, detailed technical specifications, selection criteria for green contractors, green certification advice, gender and social aspects and recommendations for incentives and innovative business models to promote developer participation. Drawing on lessons learned from the deep-dive proponents, the guidelines shall provide practical and context-specific recommendations while maintaining a broader scope to guide national-level procurement strategies for implementing NbS effectively.	Lead: UNEP/ SEforALL Key: NCWG, UFSC (Brazil) CRAU (Côte d'Ivoire) ITC (Cambodia)
4.2.2	Policy and regulation guidelines	Development of tailored proposals for strengthening national regulations and policy instruments in each of the three participating countries to enable the mainstreaming of NbS for urban cooling. The guidelines will assess existing regulatory frameworks to identify opportunities, gaps, and misalignments that currently limit the integration of NbS. The proposals will be developed in consultation with relevant stakeholders, including ministries, local governments, planners, architects, and legal experts, and will consider both regulatory incentives and enabling measures. The output will include specific recommendations for revising planning and construction norms to support cooling co-benefits, with attention to gender and social inclusion, climate resilience, and cost-effectiveness.	Lead: UNEP/ SEforALL Key: NCWG, UFSC (Brazil) CRAU (Côte d'Ivoire) ITC Cambodia

Output 4.3: Financial Incentive Dialogue: Policy makers in participating countries have access to tailored recommendations on financial incentives to promote nature-based cooling.

Under these activities, proponents (developers) can put forward promising financial incentives such as a floor area ratio (FAR) bonus program to unlock private finance for promoting nature for cooling. This idea can be presented alongside case studies from winning proponents' projects to provide concrete examples of how the incentives work under specific site conditions. For example, if developers provide certain areas of green space on their project sites, they could receive additional floor area beyond zoning restrictions and generate additional revenue from tenants to balance green development with profitability.

In cases where proponents are cities, the scenarios would focus on energy savings achievable after implementing nature-based solutions in public buildings. This would determine how much green coverage and how many trees should be provided, along with propositions for potential green development regulations. The same energy-saving benefits through nature for cooling are applicable to developers when they rent their properties to tenants. In rental scenarios, developers continue to cover electricity costs for the entire building and therefore directly benefit from energy savings, whereas when developers sell their properties to end-users, the buyers pay the utility bills and receive the energy-saving benefits.

All these ideas will be discussed in the financial incentive dialogue, and recommendations will be crafted to enhance national building energy codes/regulations and relevant policies.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
4.3.1	Three (3) National Financial Dialogues to exchange the NbS promising financial incentives and mechanism	The national dialogue on promising financial incentives and programs to promote NbS will be held in each project country. This is where developers could share their promising NbS financial schemes (e.g. floor area ratio bonus programs) with national/subnational policy-makers to jointly draft recommendations with the view to integrating them into urban planning act, green coverage regulations, building energy codes for wide-scale enforcement.	lead: UNEP/SEforALL Key: NCWG experts, winning proponents
4.3.2	Three (3) recommendation drafts on financial incentive programs	Facilitated bilateral meetings will be organized between winning proponents and potential financiers, investors, and partner organizations. These tailored sessions will provide proponents with direct opportunities to present their projects, discuss financing needs, and explore partnership possibilities. Based on the results of the financial dialogues, national governments will draft recommendations on financial incentives for nature for cooling (e.g. Floor Area Ratio (FAR) bonus program green coverage bonus program, etc). This will be peer reviewed by international experts on finance from the NCWG. The finalised recommendations are expected to feed into the building policies and national regulations.	Lead: UNEP/SEforALL Key: NCWG, winning proponents.

Component 5 - Monitoring and Reporting

Barrier addressed: B5: Insufficient Data, Monitoring Frameworks, and Performance Metrics; B6: Limited Awareness of the Effectiveness of NbS for Cooling.

Outcome 5: Monitoring and Reporting

Output 5.1: Monitoring

Monitoring activities will ensure consistent tracking of the project's progress, alignment with objectives, and compliance with reporting requirements. Three Half-Yearly Progress Reports will be prepared, offering detailed updates on project activities, milestones, and progress against the work plan every six months. Additionally, three Project Implementation Review (PIR) Reports will be submitted annually to the GEF, providing an in-depth assessment of project performance, results achieved, and lessons learned. These PIRs will align with UNEP's requirements and ensure that GEF-specific objectives are addressed. A comprehensive final report will conclude the monitoring process, documenting project outcomes, impacts, and scalability of NbS for cooling solutions, along with insights into lessons learned and recommendations for future scaling efforts.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders Lead: UNEP
5.1.1	Three (3) annual progress reports (for key stakeholders and general audience)	Reports providing a detailed account of progress across all components, oriented to provide project updates to the key project stakeholders and a broader audience. These reports will highlight key achievements, challenges faced, lessons learned and proposed next steps. Written in English, they will be visually enhanced with infographics, tables, and images. Reports will be prepared in digital PDF format for easy distribution and archiving.	Lead: UNEP
5.1.2	Three (3) Half Yearly Progress Reports	These reports shall provide a detailed update on project activities, milestones, and progress against the planned work plan every six months.	Lead: UNEP
5.1.3	Three (3) Project Implementation Review (PIR) Reports to UNEP.	The annual PIRs shall be submitted to the GEF for reporting every year on project implementation status including information on key challenges encountered, as well as an account of progress made in implementing the stakeholder engagement plan, gender action plan, ESS, and knowledge management activities. The PIRs shall align with UNEP's reporting requirements and provide a comprehensive assessment of implementation.	Lead: UNEP
5.1.4	One (1) project final report	The final report shall present a comprehensive overview of the project's outcomes, impacts, and lessons learned. It will document the achievements against planned objectives, providing insights into NbS for cooling solutions and their scalability.	Lead: UNEP
5.1.5	One (1) Gender Action Plan	A comprehensive Gender Action Plan will be developed to ensure the integration of gender-responsive approaches in NbS cooling projects, led by the GESI Expert. The plan will outline strategies to promote gender equality and inclusion across all stages of project design, implementation, and monitoring. It will provide practical guidelines for identifying and addressing gender-specific needs, enhancing women's participation in decision-making processes, and ensuring equitable access to the benefits of NbS interventions.	Lead: UNEP
5.1.6	Project Steering Committee (PSC) meetings and minutes	The PSC annual meetings serve as a governance mechanism to oversee project progress, facilitate decision-making, and ensure alignment with strategic objectives. These meetings bring together key stakeholders, including project partners, government representatives, funders, and technical experts, to review implementation updates, address challenges, and provide guidance on next steps. The minutes of these meetings serve as an official record of discussions, decisions made, action items assigned, and any recommendations provided by the committee.	Lead: UNEP Key: SEforALL

Output 5.2: Reporting

The evaluation effort will include both a mid-term evaluation and a final evaluation, which will be conducted independently and managed by UNEP. The mid-term evaluation will be conducted at the mid-point of the project and will assess progress, relevance and effectiveness, and provide recommendations for adjustments during the remainder of the project. The final evaluation, which will be conducted at the end of the project, will assess the overall performance, impact and sustainability of the results. Both evaluations will include stakeholder consultations and a review of project results, ensuring alignment with UNEP and GEF priorities while contributing to a robust understanding of the project's effectiveness and long-term potential.

Code	Deliverable short title	Minimum indicative content	Relevant stakeholders
5.2.1	One (1) mid-term review of the project administered by UNEP	An independent evaluation, conducted at the project's midpoint, shall assess take stock of progress and performance in reaching the project objective. The evaluation will include stakeholder consultations, a review of deliverables, and recommendations for the remaining project duration. The MTR shall include information on progress in reaching actual results for Core Indicators and co-financing.	Lead: UNEP - Independent evaluations led by Evaluation Office
5.2.2	One (1) terminal evaluation of the project administered by UNEP	Conducted at the project's conclusion, the terminal evaluation shall assess overall achievements, impacts, and sustainability of outcomes. It will focus on project effectiveness, efficiency, and alignment with UNEP and GEF priorities.	Lead: UNEP - Independent evaluations led by Evaluation Office

Institutional Arrangement and Coordination with Ongoing Initiatives and Project.

Please describe the Institutional Arrangements for the execution of this project, including financial management and procurement. If possible, please summarize the flow of funds (diagram), accountabilities for project management and financial reporting (organogram), including audit, and staffing plans. (max. 500 words, approximately 1 page)

B4.1. Macro-institutional arrangements

The UNEP Environment Programme serves as the implementing agency for this project, while the UNEP Cool Coalition Secretariat acts as the main executing agency. Certain execution responsibilities are delegated to the Sustainable Energy for All (SEforALL) Initiative. UNEP requests the dual implementation and execution role for this project in alignment with GEF policy (GEF/C.70/Inf.18: Guidelines on the Project and Program Cycle Policy) paragraph 9 which notes that this dual function may be permitted in case of "(d) Global or regional coordination child projects for Programs, global or regional platforms for knowledge sharing and Umbrella Enabling Activities for a group of countries." To this end, UNEP's Cool Coalition Secretariat will lead execution for the global and regional interventions planned under the project. As noted previously, country partners and co-executing entities will be identified during project implementation to support the execution of national-level interventions in Brazil, Cambodia and Cote d'Ivoire.

The project governance structure will include the Project Steering Committee and the Nature for Cooling Challenge Core Team, engaging a range of global and country-level implementing partners. The macro-institutional arrangements for the Nature for Cooling Challenge project are outlined in Figure 9, and the roles and responsibilities described in Table 8.

Figure 9. Macro-institutional arrangements of the NCC project.

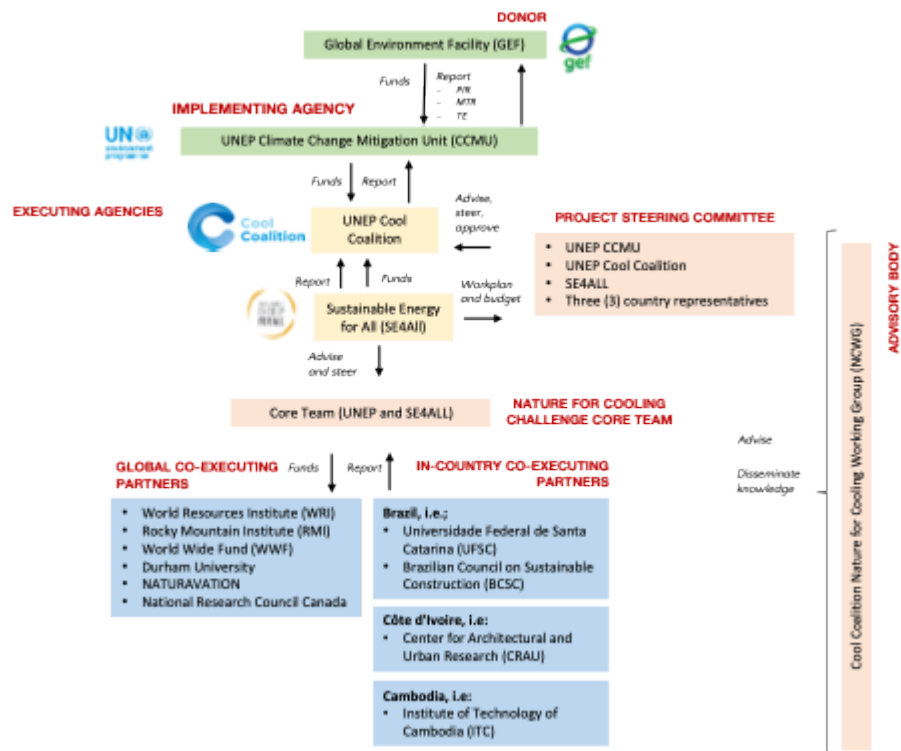


Table 8. Roles and responsibilities

Body	Roles and responsibilities
Implementing Agency (UNEP)	UNEP serves as the Implementing Agency (IA) for this project, providing overall supervision and guidance in accordance with GEF and internal requirements and the specifications outlined in this project document. As the IA, UNEP will coordinate and communicate with the main executing agency, the UNEP Cool Coalition Secretariat. - Participate in the planning of contracting and technical selection processes. UNEP will coordinate fund transfers to the executing agency through the execution agreement set-up for this purpose. - Monitor and oversee the Executing Agency compliance with the respective Execution Agreement and project implementation in accordance with the project document, annual work plans and budgets, co-financing agreements and UNEP's rules and procedures in terms of efficiency and transparency. - Review and approve, together with the Project Steering Committee, the project progress and financial reports, undertake and complete monitoring, assessment and control activities, evaluations and project oversight. - Report to the GEF Secretariat and the Evaluation Office through the annual Project Implementation Review (PIR), on project progress and provide consolidated financial reports to the GEF Trustee. - Lead the Mid-Term Review - Monitor the implementation of the Gender Action Plan.
Executing Agency (UNEP)	The executing agency proposed for this project is the UNEP's Cities Unit which falls under the Climate Change Division. The Cities Unit serves as the Secretariat of the Cool Coalition. The

UNEP Cool Coalition team will be responsible for the day-to-day management and implementation of the project, ensuring that all activities are carried out in accordance with GEF policies and guidelines. UNEP Cool Coalition team will work closely with the implementing agency, to provide technical oversight to the technical and financial aspects of the project, including the preparation of work plans, budgets, progress reports, and monitoring and evaluation aspects of the project. It will coordinate with national stakeholders, local partners, and other implementing agencies.

Project Steering committee

UNEP Cool Coalition has selected SEforALL to co-execute certain project activities, recognizing its strong expertise in both sustainable cooling and nature-based solutions. SEforALL brings proven experience and technical capabilities in designing and implementing innovative approaches that align with the objectives of the Nature for Cooling Challenge. SEforALL will contribute its institutional expertise and tools to support knowledge management, capacity building, and financing for NbS for cooling—through website and communications development, pre-feasibility studies, co-development of a Rapid Assessment Tool and training materials, geospatial analysis, and matchmaking for financing in the three project countries.

The Project Steering Committee (PSC) will provide strategic oversight and guidance to the executing agencies, ensuring alignment with political priorities, technical quality, procurement policies, and financial management standards. The PSC will facilitate coordination among key stakeholders, ensuring that project implementation follows GEF policies and contributes to the expected outcome. It will also consider and approve annual workplan and budget to propose necessary adjustments, ensure efficient resource allocation, and address any emerging challenges to enhance project impact. The PSC will consist of the following representatives:

- One (1) representative from the Implementing Agency (UNEP-CCMU)
- One (1) representative from the main executing agency (UNEP Cool Coalition)
- One (1) representative from the co-executing agency (SEforALL)
- Three (3) representatives from the countries - Brazil, Cambodia, and Côte d'Ivoire.

The detailed TORs outlining the functioning of the PSC will be adopted at the first PSC meeting. They will include a knowledge-sharing segment, which the World Bank will be invited to co-chair, to facilitate exchange between this project and the GPSC and to ensure alignment with GPSC activities.

The PSC will convene twice per year, either virtually or in person, in conjunction with a relevant project-related event. The first meeting will approve the work plan and budget, while the second will modify them as needed. Fund disbursement will follow PSC approvals. To ensure inclusivity, particular attention will be given to achieving gender parity in the PSC. Beyond ensuring balanced representation, the PSC meetings will integrate discussions on gender equality and human rights, supported by dedicated Gender Equality and Social Inclusion (GESI) expert and facilitators where necessary. Further consultations will be held during project implementation with representatives from the three countries, with a view to potentially establishing national steering committees to guide the project's execution at the national level.

[*] The Ozone Cell of the Ministry of Environment, Forest and Climate Change (TBC).

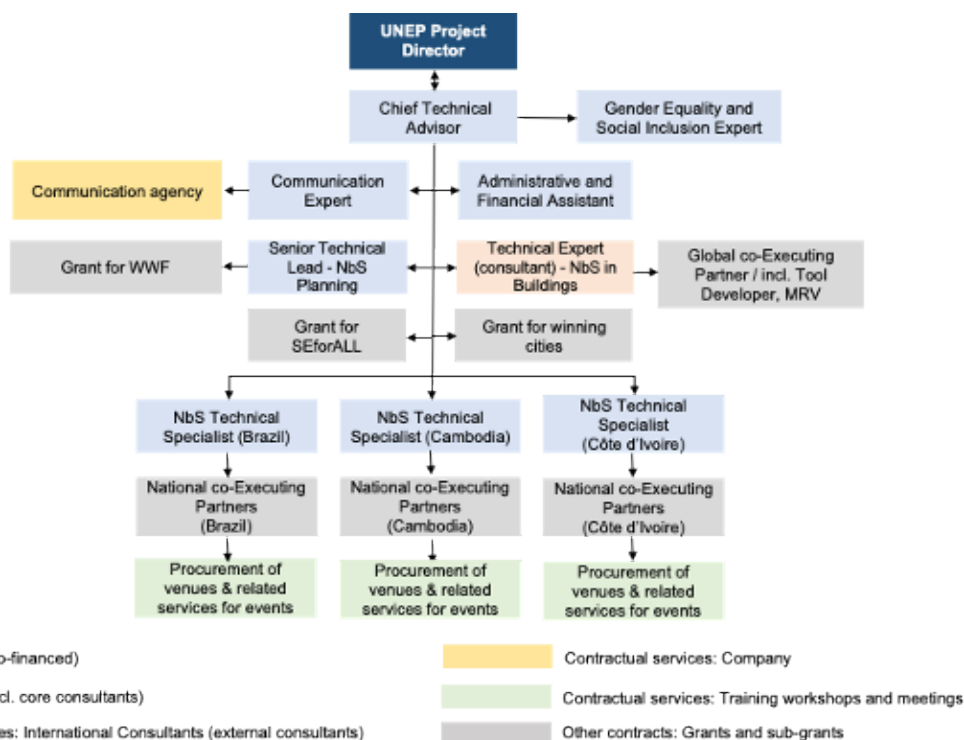
Nature for Cooling Challenge Core Team	The NCC Core Team will oversee the execution of project activities and will be composed of one representative from UNEP Cool Coalition and one representative from SEforALL. The team will meet at least quarterly through virtual meetings and will regularly invite relevant implementing partners as needed. For instance, WWF, in its role as the Challenge Technical Coordinator, will work closely with the UNEP Cool Coalition Secretariat daily to co-design the challenge, particularly during the first year of the project when outreach and advocacy efforts are most concentrated. Additionally, the team will maintain regular communication and engagement with the Nature for Cooling Working Group once it is established and operational, ensuring cross-fertilization of knowledge and experiences between the project activities and the expertise of the Working Group members.
Cool Coalition Nature for Cooling Working Group	The NCCGW will be established during project execution to serve as the project's advisory board. Two existing working groups under the Cool Coalition—the Urban Heat Adaptation Working Group and the Passive Cooling Working Group—will merge to form a new joint working group (NCWG) focused on Nature-based Solutions for Buildings. This group will provide insights and technical guidance to the project team and the PSC while actively engaging in various project activities, including the selection of winning proponents.
Global and country executing partners	The project will engage a range of global and country-level executing partners to facilitate its execution, drawing on the experiences of other initiatives (see section below). These implementing agencies will provide specific technical services to prepare project deliverables and achieve the desired outputs. They are responsible for delivering the activities outlined in this document. At the country level, executing partners will liaise and engage with relevant national and local political stakeholders to ensure alignment with their priorities, ensuring the project addresses their needs and maximizes its impact. The country executing partners will be defined during the project execution in collaboration with the representatives of the beneficiary countries in the PSC and recognising the significant expertise of existing national institutions.

B4.2. Micro-institutional arrangements

The Nature for Cooling Challenge Core Team (NCC-PT) comprises a small group of professionals led by a Chief Technical Advisor (CTA) and reports directly to the UNEP co-financed Project Director^[1]. Guided by the PSC's directives, its primary function is to ensure the effective implementation of annual work plans and budgets. The NCC-PT is supported by technical consultancies and implementing partners at both global and country levels (Figure 10).

The project work plan is structured so that each consultancy deliverable is supervised by a designated NCC-PT member based on their expertise. In addition to overseeing external consultants, NCC-PT members are responsible for delivering specific outputs themselves and ensuring the integration of all deliverables into broader project outcomes. The team is responsible to achieving the targets outlined in Annex C, which extend beyond the deliverables specified in each component. This structured approach ensures clear accountability for every action and deliverable in the work plan, avoiding duplication of efforts. A detailed list of assigned deliverables for each NCC-PT member and consultancy is available in Annex J of this document.

Figure 10 - Nature for Cooling Challenge institutional arrangement



[1] This position is fully co-financed by UNEP and will not incur any cost to the project.

Will the GEF Agency play an execution role on this project?

Yes

If so, please describe that role here and the justification.

UNEP offers a strong comparative advantage for internal execution through its resident knowledge and administrative capacity. The Cool Coalition Secretariat, housed within UNEP, is a global network of over 130 members, including governments, cities, international organizations, businesses, and experts. This coalition equips UNEP with extensive expertise on efficient and sustainable cooling solutions, enabling the organization to leverage the knowledge and resources of its partners worldwide. UNEP's Cities Unit, with a global team of professionals specializing in climate solutions such as nature-based solutions (NbS), energy efficiency, and urban sustainability, ensures the organization has the necessary expertise to execute this project. The Cities Unit also has established administrative capacity, with prior experience executing GEF-funded projects, enhancing its ability to comply with GEF procedures and requirements. These include GEF-7 Sustainable Cities Impact Program - Global Platform (GEF ID: 10452) and the District Energy Global Initiative (GEFID: 9320). Furthermore, UNEP has a strong presence in the three countries where this project will operate, with country offices in Brazil, the West Africa Regional Office based in Abidjan, Côte d'Ivoire and the Asia-Pacific Regional Office located in Bangkok, Thailand, who works with Cambodia.

Given the global nature of the project and its emphasis on cross-country learning, coordination, and scale, a global lead is essential to ensure coherence, consistency, and knowledge exchange across the participating countries. UNEP, through the Cool Coalition and its Cities Unit, is uniquely positioned to serve in this role due to its global mandate, technical expertise, and convening power. At the same time, the project will ensure strong country ownership by engaging local executing partners in each of the three countries. These partners will play a central role in contextualizing the global approach, adapting tools and methodologies to local realities, and leading on-the-ground implementation. This structure allows the project to maximize both global coherence and local relevance.

The Cool Coalition Secretariat is already leading global advocacy and coordination efforts to implement the Global Cooling Pledge—one of nine non-negotiated declarations, pledges, and charters that were key outcomes of the COP28 Presidential Action Agenda, under the leadership of the United Arab Emirates as host of the 2023 COP28. This project aims to fully leverage the Cool Coalition’s potential as a trusted partner in advancing sustainable cooling solutions, drawing on its extensive expertise, networks, and established credibility in the field.

Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing (max. 500 words, approximately 1 page)

B4.3. Coordination with ongoing initiatives and projects

Several synergistic initiatives are promoting efforts to scale up NbS for cooling. The project will explore collaboration opportunities with these initiatives to avoid duplication of efforts and integrate relevant lessons learned into the delivery of specific project outputs. Table 9 provides an overview of the identified initiatives, including their objectives, relevance to this project, and intended coordination and synergies.

Table 9. Coordination with ongoing initiatives and projects.

International organizations		
Global Alliance for Buildings and Construction (Global ABC) / UNEP	The Global ABC leads global efforts for zero-emission and energy-efficient buildings, including advocacy efforts to the consideration of NbS to reduce the cooling demand of buildings. The recently adopted Declaration of Chaillot, which was supported and coordinated by the Global ABC acknowledges the need to zero/low-emission energy sources for building service including cooling.	The Global ABC will be invited to join the NCWG providing advisory support and mobilizing its global and in-country networks to enhance the NCC outreach under output 1.1, 1.3 and 1.4.
Generation Restoration Project / UNEP	GenRes project promotes large-scale restoration, especially in urban areas, contributing to the UN Decade on Ecosystem Restoration. The project supports restoration projects in Douala (Cameroon), Dakar-Plateau (Senegal), Thies (Senegal), Quezon City (Philippines), Kochi (India), Sirajganj (Bangladesh), Samborondón (Ecuador), Mexico City (Mexico), Manaus (Brazil), Mendoza (Argentina), Curitiba (Brazil), Barranquilla (Colombia), Kisumu County (Kenya), Overstrand (South Africa), and Istanbul (Türkiye).	The project will seek to leverage the experiences of the pilot cities to advocate for NbS for cooling in the NCC dissemination communication campaign and events. It will also seek to collaborate with the cities from the pilot countries.
GEF-8 Sustainable Cities Impact Program (SCIP)/ World Bank	The GEF-8 SCIP program is structured around a two-track approach: (i) track 1, a Global Platform to connect cities and serve as a convening space for developing and	Complementarities and potential additionality: Through its unique ‘challenge’ format as well as its commitment to

	sharing knowledge to promote integrated urban planning; and (ii) track 2, City-level Projects (or Child Projects). The SCIP will provide critical support to the Global Platform for Sustainable Cities (GPSC) under Track 1. GPSC, which was originally established under GEF-6, has played a pivotal role in advancing urban sustainability through integrated planning, knowledge sharing, and city-level project implementation. Building on this foundation, GEF-8 SCIP will continue to enhance GPSC's role while supporting the broader objectives of SCIP. The GPSC is a knowledge sharing and capacity building initiative that empowers cities to tackle critical challenges of rapid urbanization, including unsustainable land expansion, environmental degradation, climate change, resource depletion, and rising inequality. By promoting an integrated approach that aligns urban planning, climate action, and sustainable resource management, GPSC enables cities to develop holistic and coordinated solutions.	providing targeted technical assistance and support to participating actors, the NCC project will seek to, (a) engage a broad range of stakeholders including universities, academic institutions, cities or municipalities (any entity/proponents that fits the criteria for the Challenge), (b) demonstrate technological solutions showcasing the viability of NbS for Cooling (without focusing on urban design in particular), (c) at the policy level, focus on financial incentives and mechanisms to direct investment towards cooling technologies and solutions." Scope for collaboration and synergies: The project will share knowledge and relevant tools and products with the GPSC, utilizing its events, outreach and network to wider number of cities. The project will facilitate the participation of selected proponents in global events of the GEF-8 SCIP (deliverable 1.3.3). Further, during the project inception phase, discussions with GPSC and World Bank will be pursued, and in case a similar working group is planned under Thematic Pillar 1 on Urban Cooling, the NCC project will seek to establish a joint management structure and explore opportunities for combining the various work streams. Similarly, the possibility of an interoperable repository/platform on knowledge sharing will be explored with the GPSC during project inception as project interventions are concretized further.
Mission Innovation	Mission innovation catalyzes global clean energy action, supporting sustainable urban transitions and clean energy solutions.	Mission innovation will be invited to join the NCCGW providing advisory support and mobilizing its networks to enhance the NCC outreach under output 1.1, 1.3 and 1.4.
Civil Society Organizations		
One Planet Cities Challenge / WWF	WWF is part of a growing coalition calling on world leaders to set nature on the path to recovery by 2030 – aNew Deal for Nature and People as comprehensive as the global climate deal. WWF has been running the One Planet Cities Challenge for the past 10 years, with over 650 cities taking part.	The knowledge created under the One Planet Cities Challenge will serve as a foundational base for the NCC. WWF will be engaged to lead the design of the Challenge and provide technical inputs to the selection of the winning proponents under output 1.1., and co-chair the NCCGW under output 1.3.5.

Urban Transformation Platform / Rocky Mountain Institute (RMI)	The RMI focuses on urban transformation through clean energy and sustainable practices. It provides practical implementation support to cities identify and scale energy system interventions that will cut GHG emissions. The American Cities Climate Challenge Renewables Accelerator – an ongoing partnership with the World Resources Institute - provides cutting-edge tools, resources and technical assistance to help U.S. cities advance ambitious renewable energy goals-	The project will seek to leverage on RMI experience for the development of the Global Framework for NbS impact quantification under output 1.2.
Global Forest Watch / World Resources Institute (WRI) Ross Center for Sustainable Cities	The Global Forest Watch focuses on enhancing transparency and accountability in forest management by providing openly accessible tools that leverage satellite data, advanced algorithms, and cloud computing. By equipping experts and non-experts with real-time information on forest change, GFW empowers users worldwide to take informed action for the protection and sustainable use of the world's remaining forest landscapes	The project will seek to collaborate with WRI to provide technical inputs to the Global Framework for NbS impact quantification under output 1.2.
Naturvation (Durham University)	Naturvation is a 4-year project funded by the European Union's Horizon 2020 that focuses on innovation in nature-based urban solutions, enhancing understanding of NbS in cities.	The project will seek to collaborate with Naturvation to develop the Rapid Assessment Tool and its associated materials under output 1.2. and 2.1.
Tree Equity	Tree Equity works to address disparities in urban green space, contributing to cooling through nature-based solutions in U.S. cities.	The project will seek to collaborate with TreeEquity to provide technical inputs and insights for the development of the Rapid Assessment Tool under output 1.2. and 2.1. drawing on its experience working with local authorities.
The Nature Conservancy (TNC)	TNC focuses on large-scale conservation efforts and NbS to address climate change and biodiversity loss.	The project will seek to collaborate with TreeEquity to provide technical inputs and insights for the development of the Rapid Assessment Tool under output 1.2. and 2.1. drawing on its experience on NbS implementation.
Brazilian Council on Sustainable Construction (Brazil)	CBCS promotes collaboration between academia, government, and the private sector to develop and disseminate knowledge and good sustainability practices in civil construction.	The CBCS will co-lead the organization of national-level activities in Brazil across different outputs collaborating with UNEP/SEforALL.
Private Sector		
Heat Resilience tool / Google Research AI	The Heat Resilience Tool applies AI to satellite and aerial imagery, helping cities to quantify how to reduce surface temperatures with cooling interventions, like planting trees and installing highly reflective surfaces like cool roofs.	The project will seek to collaborate with Google to provide technical inputs and insights for the development of the Rapid Assessment Tool under output 1.2. drawing on extensive experience on AI.

IFC Sustainable Cooling Initiative	The initiative works with countries through five complementary modes of engagement: 1) providing thought leadership; 2) developing transformative cooling systems; 3) enhancing investment readiness of innovators and adopters of cooling solutions; 4) de-risking finance; and 5) operationalizing and scaling up investments.	The project will explore potential investment opportunities as the pre-feasibility studies of the pilot projects from the project are shared with IFC.
UrbanLand (Cambodia)	Urbanland is a design-led real estate developer in Cambodia, pioneering people-centered urban development. Through its commitment to quality, sustainability, and green space integration, Urbanland is shaping healthier, more livable communities and advancing nature-based approaches to urban design.	Urbanland is a developer who will support the pilot project by lending their properties for the NbS demonstration. They will also support the draft of a financial incentive programme (e.g. FAR bonus incentive) to scale up NbS at large scale with the power of private sector's investment.
SNEDAI Group (Cote d'Ivoire)	SNEDAI Group develops and manages large-scale construction projects in Côte d'Ivoire. It builds housing as well as public infrastructure, while also undertaking rehabilitation of social institutions and vocational centers. It functions as a real estate developer, delivering residential and commercial properties	SNEDAI MIKAF will support the NCC project through co-development of knowledge under Outcome 1 (knowledge sharing and development), providing expertise in urban heat assessment, hotspot analysis and identification of nature-based solutions through research activities related to rammed earth, compressed and stabilized earth bricks, cast earth and synthetic straw. Additional investment will be leveraged by the project through SNEDAI's ongoing and future investments in construction.
OHEL International (Cote d'Ivoire)	OHEL International is a real estate developer and construction company, pioneering eco-friendly construction in Côte d'Ivoire. It specializes in building homes and infrastructure using BTCS (Stabilized Compressed Earth Blocks), reducing carbon emissions and improving thermal efficiency. It develops housing, schools, clinics, sports complexes, and offers rehabilitation services, plus real estate support and land acquisition. Its focus is on affordable, durable, and low-carbon buildings, positioning itself as a pioneer in green construction and climate-friendly solutions.	OHEL International will support the NCC project through co-development of knowledge. The results from the OHEL-SHIFT HOUSE Côte d'Ivoire pilot project will quantify the cooling and energy demand reduction effects and will inform scientific research, vocational training programs, and national policies (building standards, Nationally Determined Contributions - NDCs, and national biodiversity and climate strategies). This approach will directly contribute to strengthening national capacities and disseminating replicable models for the development of low-carbon buildings and neighborhoods with enhanced thermal comfort. OHEL will additionally provide support through the creation of the Green Building Foundation, a joint structure aimed at strengthening cooperation between the private sector, local authorities, and universities around natural cooling and sustainable construction.
National Research Institutes		
Federal University of Santa Catarina (Brazil)	UFSC is advancing research on energy efficiency in buildings in Brazil.	The UFSC will contribute towards the organization of national-level activities in Brazil across different outputs collaborating with UNEP/SEforALL. Avenues for collaboration will be explored during the project inception

		stage as the execution arrangements are finalized.
Institute of Technology of Cambodia (ITC) (Cambodia)	ITC is a leading engineering and technology institute in Cambodia, driving innovation in sustainable design and climate-responsive architecture. Through its leadership in passive cooling strategies and nature-based solutions, ITC supports research, capacity-building, and policy alignment to promote energy-efficient, resilient buildings.	The ITC will contribute towards the organization of national-level activities in Cambodia across different outputs collaborating with UNEP/SEforALL. Avenues for collaboration will be explored during the project inception stage as the execution arrangements are finalized.
Center for Architectural and Urban Research (Centre de Recherches Architecturales et Urbaines) (CRAU) (Côte d'Ivoire)	The CRAU is dedicated to research and publication in the disciplines of physical spatial planning, particularly urban planning, the environment, architecture, and construction. It coordinates all research in these fields in Côte d'Ivoire.	The CRAU will contribute towards the organization of national-level activities in Côte d'Ivoire across different outputs collaborating with UNEP/SEforALL. Avenues for collaboration will be explored during the project inception stage as the execution arrangements are finalized.

B.4.4. Coordination and synergies with the World Bank Global Platform for Sustainable Cities (GEF-8)

Activities of the GPSC

A multidisciplinary Network of Expertise on Urban Nature-Positive Development advancing nature-positive urban solutions.

Comprehensive Framework for Green and Blue Infrastructure including guidelines, strategies, and tools for cities (under preparation)

Targeted advisory and technical assistance to selected cities in implementing nature-positive projects and strategic planning

Training and Convening on Urban Nature and Biodiversity, to discuss nature-positive urban development
Convening on Urban Nature and Biodiversity, to discuss nature-positive urban development

Potential synergies and complementarities

- NCC project will establish the Nature for Cooling Working Group that will be hosted within the Cool Coalition, which will bring experts from building experts and technology experts to advance nature-based cooling solutions in the built environment.
- Recognizing that urban planning professionals and practitioners provide complementary expertise, the NCWG will welcome the participation of GSCP experts and is willing to join the mentioned network to exchange knowledge and experiences.
- The design of the "Nature for Cooling Challenge" could use the framework and other similar materials developed previously by the GPSC to inform the interventions that project will seek.
- The implemented pilots could provide the business case to be incorporated into the framework development.
- The project will develop a Rapid Assessment Tool to quantify the benefits of NbS for cooling, including the estimation saving energy costs vs. upfront cost. Once developed, this tool can be used by the GPSC to engage in its technical advisory and technical assistance with cities expanding the geographic and knowledge reach of both programmes.
- The project has secured funding to participate in global events and could provide speakers to present its findings and results at GPSC convenings, including high-level representatives from the cities where the pilots will be implemented and/or from private developers.

Webinars on Green Urban Infrastructure and Resilience Strategies

In addition, the NCC project could use of the GPSC network to disseminate the Challenge call for proposals in Brazil and Côte d'Ivoire, where GPSC has operated.

Additionally, the project will seek synergies and collaboration with other GEF projects that are programmatically aligned with the Nature for Cooling Challenge in the participating countries, with a focus on cross-fertilization of knowledge, exchange of lessons learned, and coordination of efforts. These include:

- Promoting zero-emission buildings in Brazil through climate technologies and policies (EDinova) (GEF-8)

Core Indicators

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0	0	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA- ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
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Documents (Document(s) that justifies the HCVF)

Title

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)	0	670427	0	0
Expected metric tons of CO₂e (indirect)	0	66213	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)				
Expected metric tons of CO₂e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO₂e (direct)		670,427		
Expected metric tons of CO₂e (indirect)		66,213		
Anticipated start year of accounting		2025		
Duration of accounting		20		

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
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Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
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Female		310		
Male		310		
Total	0	620	0	0

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

6 Greenhouse Gas Emissions Mitigated (metric ton of CO₂e)

A total of lifetime direct and indirect (consequential) GHG mitigation of 736,640 tCO₂e, has been reported under the core indicator “Greenhouse Gas Emissions Mitigated”. GHG mitigation estimations have been quantified due to benefits accountable through implementation of NbS through improved microclimate, hence reduced space cooling demand and reduced energy demand of buildings. Second GHG mitigation is accounted for due to carbon sequestration by green infrastructure being implemented in the challenge winning cities.

Baseline of space cooling consumption and associated GHG emissions have been sourced from APEX tool developed by IFC, World Bank Group and Data Portal for Cities by GCoM (Global Covenant of Mayors) for Climate & Energy. GHG emissions calculator prepared by UNFCCC has been also used to quantify GHG saving potential. On the conservative side, assuming an increase in local zone temperature of 4degC due to UHIE (UHIE) has been considered. 5% increase in cooling energy demand for every 1degC increase in city temperature has been accounted. NbS has the capacity to cool the ambient air between 1°C to 8°C. Thus, Direct GHG savings have been calculated for deep dive cities through implementation of NbS, also accounting carbon sequestration potential in direct GHG savings. For light touch cities, where support will be provided through integration of NbS in masterplans/ development plans of the city, long term indirect (consequential) GHG savings have been estimated.

11 People benefiting from GEF-financed investments disaggregated by sex (count)

621 people (50% women) are estimated to benefit from the implementation of the Challenge. The direct beneficiaries of the project and direct support through their active participation in capacity-building and knowledge-exchange activities. These beneficiaries will receive non-monetary benefits such as access to specialized tools, enhanced technical capacity, policy-relevant knowledge, and opportunities for professional networking. These activities include, but are not limited to, engagement as users of the Web Platform, membership in the Nature for Cooling Working Group, participation in Partnership Dialogues, webinars, national training sessions, and hands-on support for the Rapid Assessment Tool. Additional direct support will be provided through country clinics, matchmaking events for project development, collaborative design charrettes to optimize NbS interventions, study tours, and monitoring-focused training. The project will ensure that sex-disaggregated data is collected, enabling tracking of male and female participants to promote gender-responsive reporting and outcomes.

Further details included in Annex M.

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Risk: NbS for cooling implemented under the NCC may face challenges in adapting to changing climatic conditions, potentially reducing their effectiveness over time. Increased frequency of extreme weather events (e.g., heat waves, droughts, and heavy rainfall) may adversely affect the survival and performance of urban vegetation and green infrastructure. Mitigation measures: Incorporate future climate scenarios into the deep-dive selected initiatives design phase to assess the long-term viability of NbS. Include climate risk assessments and contingency planning as mandatory elements in the ToR for the execution of the initiatives funded.
Environmental and Social	Moderate	Risk: The project will focus on implementing NbS for cooling in urban areas, particularly private owned buildings and public spaces. During the construction, there may be disruptions to neighbourhood life, including restricted access to shared areas, noise, dust, and disturbances to local biodiversity. Additionally, the repurposing of existing public spaces may affect how communities use these areas, potentially leading to conflicts or resistance from local residents. Mitigation measures: The project will take a good practice approach, incorporating a safeguard management approach, including identifying potential environmental and social impacts early implementation of NbS for cooling projects. Additionally, the project will engage local communities and civil society organizations early in the planning process to understand their perspectives, needs, and potential concerns, ensuring that their inputs shape the project design and so that potential risks that may arise during implementation can be pre-empted and addressed. Establish clear communication channels to inform communities about the purpose, duration, and expected outcomes of construction activities.
Political and Governance	Moderate	Risk: The project may face political and governance challenges due to the cross-sectoral nature of urban cooling solutions, which requires coordination between multiple government agencies and alignment with existing urban planning frameworks. Differences in priorities among stakeholders, political instability, changes in government leadership, or shifts in policy focus may impact project continuity and support. Additionally, the lack of political commitment or buy-in from key authorities may slow down decision-making processes, delay project approvals, or hinder effective implementation. Mitigation measures: Establishment of a strong political engagement strategies, such as involving key stakeholders and building alliances with decision-makers from an early stage, to ensure broad support. Develop formal agreements, such as MoUs or partnership frameworks, to secure long-term commitment beyond political cycles. Align the project with national and local policies, including urban planning and climate adaptation strategies, to demonstrate its relevance to existing agendas. Implement capacity-building

		initiatives to enhance government officials' understanding of NbS benefits and facilitate interdepartmental collaboration.
INNOVATION		
Institutional and Policy	Low	Risk: The implementation of NbS for cooling may face significant institutional and policy challenges due to overlapping regulations, such as the climate agenda, energy efficiency mandates, urban planning regulations, and building and public space standards. This regulatory framework is often governed by different departments and ministries, which can lead to conflicting priorities and lack of coherence. Mitigation measures: Conduct a thorough policy and institutional analysis to map existing regulatory frameworks and identify overlaps or gaps. Building on this analysis, the project will encourage coordination and collaboration through existing/new platforms and working groups, aiming to harmonize policies related to climate adaptation, energy efficiency, urban planning, and building standards to reduce conflicts and enhance coherence. Capacity-building workshops will be organized to train government officials on cross-sectoral coordination and to foster institutional dialogue.
Technological	Low	Risk: Insufficient skills and limited habits among national and local government staff and urban planners in using digital tools to guide decision-making. This issue is compounded by the general unfamiliarity with data-driven approaches and the absence of systematic practices for integrating digital tools into urban planning processes. Moreover, accessing relevant local data poses a significant challenge, as local datasets related to urban heat, land use, vegetation cover, or microclimatic conditions either do not exist or are fragmented, outdated, and not standardized. Mitigation measures: Capacity-building designed to enhance the digital literacy and technical skills of stakeholders involved in urban planning and cooling strategies. Training sessions will be organized to familiarize users with the functionalities of the digital tool, including data input, analysis, interpretation, and practical application in planning processes. Furthermore, the project will collaborate with local government agencies and research institutions to identify and consolidate existing datasets and develop mechanisms for continuous data collection and updates.
Financial and Business Model	Moderate	Risk: Difficulty in mobilizing sufficient co-finance, as the project relies on the commitment of local governments, that often face significant budget constraints and competing priorities, and private sector engagement, which may perceive these interventions as having low or uncertain returns on investment. This results in a lack of structured business models that can clearly demonstrate the economic value and return on investment from cooling solutions. Mitigation measures: The project will prioritize developing proof-of-concept demonstrations that clearly showcase the economic, social, and environmental benefits of NbS for cooling interventions. These demonstrations will serve as flagship projects that de-risk investment by providing concrete

		evidence of viability and impact. In addition, the NCC will provide grant support to the winning proponents' initiatives, enabling them to implement pilot projects with reduced financial risk. By leveraging grant funding to offset initial costs and demonstrate the long-term savings and benefits, the project will help build confidence among potential investors and local authorities.
EXECUTION		
Capacity	Low	Risk: The successful implementation of the project may be hindered by insufficient capacity among local government authorities, technical staff, and implementing partners. Additionally, there may be challenges related to institutional coordination, as multiple government departments and agencies may be involved without clear roles and responsibilities. Mitigation measures: The project will incorporate a phased and flexible approach to ensure that local government authorities, technical staff, and implementing partners can realistically manage their roles and responsibilities alongside existing commitments. Furthermore, the project will employ external technical support to guide and support the local staff and ensure continuity during periods of limited availability. Additionally, timelines will be structured to allow for adaptive management, accommodating delays or capacity gaps without compromising project outcomes.
Fiduciary	Low	Risk: The project may face fiduciary risks related to the management and disbursement of funds, particularly given the involvement of multiple stakeholders, including local governments, implementing partners, and private sector entities. Challenges may arise in maintaining transparent and accountable financial management practices, especially when funds are being managed by institutions with limited experience in handling international funding or complex financial reporting requirements. Additionally, currency fluctuations, inflation, and changing economic conditions could affect the cost estimates and the financial sustainability of project activities. Mitigation measures: The project will establish a comprehensive monitoring and reporting framework with clear protocols for financial management and disbursement of funds. This framework will include frequent, detailed reporting requirements to ensure transparency and accountability at every stage of implementation. Regular financial audits and progress reports will be mandated to identify and address any discrepancies promptly.
Stakeholder	Moderate	Risk: The project may encounter challenges related to stakeholder engagement and coordination, particularly given the diverse range of actors involved. There is a risk that key stakeholders may not fully buy into the project's objectives, which could lead to resistance, low participation, or lack of ownership in the implementation process. Additionally, inadequate stakeholder involvement could also result in limited public acceptance of NbS interventions, especially when these involve changes to public spaces or modifications to existing land use practices. Mitigation Measures: The project will develop a comprehensive stakeholder engagement strategy covering all project phases, ensuring

		inclusive and participatory approaches that involve all relevant actors in the planning, implementation, and monitoring phases. Early and transparent communication will be prioritized to build trust and foster ownership among stakeholders. Additionally, multi-stakeholder dialogue platforms will be established to facilitate continuous interaction and conflict resolution. Regular progress updates and inclusive decision-making processes will be employed to maintain stakeholder support and commitment throughout the project lifecycle.
Other	Low	Risk: The project may face gender-related challenges in ensuring equitable participation and benefits for women and other marginalized gender groups. Traditional gender roles, social norms, and cultural barriers may limit women's involvement in decision-making processes. Furthermore, without deliberate efforts to incorporate gender-responsive approaches, the project risks perpetuating existing inequalities or inadvertently creating gender disparities. Mitigation Measures: Gender assessments will be conducted at the outset to identify barriers to women's participation and develop targeted strategies to overcome them. Through the Gender Action Plan defined, the project will ensure that women and marginalized gender groups are actively included in stakeholder consultations, capacity-building activities, and decision-making processes. Gender-responsive indicators will be integrated into the monitoring and evaluation framework to track progress and measure the project's impact on gender equity.
Overall Risk Rating	Low	The overall risk rating for the project is assessed as low, based on a comprehensive evaluation of multiple risk categories. While some individual risk factors are rated as moderate, robust mitigation measures have been established to minimize potential impacts. The project's design incorporates proactive risk management strategies, including capacity-building initiatives, stakeholder engagement plans, transparent fiduciary management frameworks, and adaptive project implementation mechanisms. Additionally, the focus on pilot demonstrations and proof-of-concept initiatives aims to de-risk investments and build confidence among local governments and private sector stakeholders. The integration of frequent monitoring and reporting protocols further supports effective risk management and ensures that emerging challenges are promptly addressed.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Explain how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this. (max. 500 words, approximately 1 page)

C1. GEF-8 alignment

The project is fully aligned with the GEF-8 programming directions, in accordance with document GEF/R.08/29/Rev.01 ([GEF, 2022](#)). It addresses the two focal area strategies of climate change and biodiversity, to which the NCC responds. By supporting the implementation of local initiatives, the project aims to promote the success stories at the national level with international projection, thereby influencing the broader framework for incorporating NbS for cooling. This approach not only minimizes trade-offs between climate and nature, but also maximizes synergies with other national priorities. By doing so, the project will deliver tangible benefits across both focal areas, advancing climate and biodiversity objectives while contributing to global best practices.

Under the GEF-8 Climate Change focal area strategy, the project will significantly contribute to Pillar I by advancing innovation, technology development, and enabling policies for effective advancement of mitigation solutions with system-level impacts. The project's objective aligns with Objective 1.1: accelerating the efficient use of energy and materials through the integration of NbS into urban planning and building design. By demonstrating how NbS can reduce reliance on energy-intensive cooling systems, the project will enhance energy efficiency and lower the heat levels of the built environment, helping local actors transition to more sustainable and resilient infrastructure. In alignment of Objective 1.4: promote NbS with high mitigation potential, the project will champion the deployment of NbS with high mitigation potential, such as urban forests, green and blue infrastructure. By showcasing the cooling and emission reduction benefits of these solutions through pilot projects and case studies, the project will facilitate the broader adoption of NbS in urban settings globally, enhanced by the partnerships and global platform proposed by the programme. The project's focus on developing robust urban planning and building design frameworks and innovative financing mechanisms will further enhance the effectiveness and scalability of NbS, facilitating their integration into local policies and contributing to significant climate mitigation outcomes.

Furthermore, the project will support Objective 1 of the GEF-8 Biodiversity focal area strategy to improve conservation, sustainable use, and restoration of natural ecosystems and Objective 3 by increasing the mobilization of domestic resources for biodiversity. The integration of NbS, such as urban forests, green roofs, and blue infrastructure will support the expansion and preservation of critical green spaces, improving biodiversity and ecological health in rapidly growing cities. Furthermore, the project aims to increase the mobilization of domestic resources through the demonstration of NbS' financial viability via pilot projects and case studies, with the objective of working with public and private sector stakeholders to establish dedicated funding streams and sustainable business models. To this end, during project inception as winning projects for deep dive and light touch support are identified, biodiversity indicators at the project level will be designed and monitored (based on the nature of intervention, the scale of biodiversity related impacts, the context of implementation of the given intervention, etc.).

In addition, the NCC will support the four GEF-8 strategy's specific levers for creating desired transformations in the target systems ([GEF, 2022](#)): governance and policies, financial leverage, innovation and learning and multi-stakeholder dialogues and collaboration at several levels (locally, nationally, internationally). The NCC will facilitate this transformation through a comprehensive approach that includes supporting governance and policy reforms, implementing practical case studies, unlocking financial resources, monitoring progress, and managing knowledge effectively.

Governance and policies: The project will support participating countries on both local and national level to create and enhance the enabling environment necessary for implementing and scaling up of NbS for cooling. This support is grounded in providing space for dialogue and exchanges between relevant stakeholders and decision makers and access to relevant knowledge and instruments. On the global level, the project will provide opportunities for the participating countries to engage in peer-to-peer learning between developers, financiers, policymakers, and local stakeholders with the aim of ensuring alignment of NbS initiatives with global and

national and subnational strategies, as well as strengthening regulatory frameworks and building capacities to promote NbS solutions. Resulting best practices will be collected to serve as a guide for policy makers and replication in other countries outside the initial challenge setting. On the national level, networking and engagement between relevant stakeholders will be ensured to facilitate cross-sectorial and vertical alignment of government priorities. On the local level, guidelines will be developed to support integration of NbS into urban planning and building design, as well as to propose mechanisms to incentivize developers to integrate NbS into their projects.

Financial leverage: By providing a tool to analyse and prioritize NbS solutions opportunities for cooling, the project beneficiaries will enhance their ability to develop and scale impactful projects. Through targeted capacity building, the beneficiaries will gain knowledge on developing investment-ready NbS proposals and access climate finance. These sessions will equip the project beneficiaries with the knowledge and skills to align their awarded cooling project proposals with global funding opportunities. Finally, the project will also offer matchmaking opportunities for the beneficiaries to secure additional necessary funding through green finance training for this and future proposals. As previously mentioned, the project will work with local stakeholders to include NbS cooling solutions in relevant policies and regulations, which will result in incentivization of NbS in cooling projects and their inclusion in relevant investment plans. The project will also support development of recommendations for creation of carbon market mechanisms tailored to the participating countries.

Innovation and learning: Through leveraging existing knowledge and international networks, the project will create a hub on the Cool Coalition NCWG Platform that will serve as the main resource for disseminating project information, knowledge products, and lessons learned, but also exchange between peers. This hub will provide a central location for stakeholders to access valuable resources, stay informed on project progress, and engage with a wealth of shared knowledge on NbS for cooling solutions. Through the Challenge itself, local project proponents will be invited to submit innovative NbS cooling project proposals, where 12 winning proposals will receive support from the project in their implementation. The lessons learned will be captured by the project, to be disseminated through the above-mentioned hub, as well as to inform proposed enhancement to policies on both local and national level. In this process, the key beneficiaries will receive necessary training and will gain access to relevant knowledge products and instruments, which will help enhance the capacities across the board, from decision makers and developers to financiers.

Multi-stakeholder dialogues: The NCC seeks to advance NbS for cooling by actively involving a broad range of stakeholders, including government ministries, businesses, financial institutions, development finance institutions (DFIs), academia, and civil society for the purpose of fostering a market for NbS for cooling. The project will also collaborate with both international and national expert groups, think tanks, and research institutions to increase knowledge and understanding of NbS for cooling and bolster the capabilities of these organizations. Additionally, the Challenge will form partnerships with key agencies and collaborate with initiatives such as the Cool Coalition and SE4ALL.

C2. Alignment with UNEP Programme of Work, and the Sustainable Development Goals

The NCC Project is a part of UNEP's Decarbonization Programme Coordination Project (PCP). This Global project will directly support UNEP in implementing its Programme of Work through outcomes 1.2, 1.4 and 1.5 (Climate action Sub-programme) well as indicators (i), (ii), (iv) and (v) (Climate Action).

With a focus on the integration of nature-based solutions, the project also has a secondary relationship to UNEP's PCP on Conservation, Restoration and Sustainable Use of Biodiversity and will support implementation of Programme of Work outcomes 2.1, 2.2 and 2.7 (Nature Action Sub-programme) and indicators (iii), (v) and (vi) (Nature Action).

These PCPs encompass several UNEP projects aimed at accelerating the socio-economic transition required to reach net-zero GHG emissions by mid-century and leave a nature-positive legacy through concerted conservation actions, biodiversity financing, and nature-based solutions.

The project also further aligns with the Sustainable Development Goals; in particular:

- SDG Target 13.2: Integrate climate change measures into national policies, strategies and planning.
 - o Indicator 13.2.1 Number of countries with nationally determined contributions, long-term strategies, national adaptation plans and adaptation communications, as reported to the secretariat of the United Nations;
 - o Indicators 13.2.2 Total greenhouse gas emissions per year
- SDG Target 15.9: By 2030, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.
 - o Indicator 15.9.1 b) integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting
- SDG Target 17.14: Enhance policy coherence for sustainable development.
 - o Indicator 17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development
- SDG Target 17.16: Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.
 - o Indicator 17.16.1 Number of countries reporting progress in multi-stakeholder development effectiveness monitoring frameworks that support the achievement of the sustainable development goals

Finally, the project will align strongly with principles of South-South and Triangular cooperation through its global and multi-country approach, thereby facilitating:

- (i) Creation of effective partnerships across participating cities and countries, particularly through the Cool Coalition networks;
- (ii) Exchanges of knowledge, skills and experiences through peer-to-peer learning opportunities and knowledge management.

C3. Alignment with country priorities

The Nature for Cooling Challenge program addresses the urgent and growing global challenge of rising urban temperatures and the need for sustainable cooling solutions. Given the scale of the issue and the increasing energy demand for cooling, the program is designed with an international vision for scalability while beginning with an initial phase in three strategically selected countries: Brazil, Cambodia and Côte d'Ivoire.

These countries, belonging to three different regions, were chosen based on their significant UHIE, rapid urbanization, and vulnerability to extreme heat, combined with their strong national commitments to climate action and cooling strategies. Each country

represents a distinct geographic, climatic, and economic context, ensuring that lessons learned, and solutions tested can be applied globally.

The project aims to test and refine approaches in these initial countries before expanding its impact globally. By demonstrating the feasibility and effectiveness of NbS in different socio-economic and climatic settings, the programme will generate insights and best practices that can be adapted and scaled in other regions facing similar challenges.

Brazil

Brazil's alignment with the NCC focused on urban cooling is evidenced by its multi-faceted approach to climate action, driven by a series of national policies and strategic plans aimed at reducing GHG emissions, improving energy efficiency, and promoting sustainable urban development. At the heart of this focus is Brazil's NDC, which sets ambitious targets to reduce net GHG emissions by 48.4% by 2025 and 53.1% by 2030 compared to 2005 levels ([Government of Brazil, 2023](#)). This commitment reflects Brazil's determination to lead by example in global climate efforts, particularly in mitigating the impacts of urbanization and rising temperatures on energy demand and environmental sustainability.

The National Climate Change Plan ([Government of Brazil, 2008](#)) and the National Policy on Climate Change ([Presidency of Brazil, 2009](#)) form the core of Brazil's climate change strategy, with a strong emphasis on expanding renewable energy, reducing deforestation, and implementing NbS in urban areas. These policies are in line with the GEF objectives of reducing UHIE through increased carbon sequestration and promoting energy-efficient infrastructure. For example, the National Climate Change Plan sets a goal of generating more than 80 percent of Brazil's energy from renewable sources by 2030, which will directly contribute to reducing UHIE by minimizing reliance on fossil fuels and reducing emissions associated with energy production. In addition, aggressive targets for reducing deforestation in the Amazon and promoting the expansion of planted forests for environmental restoration align with the GEF's focus on maintaining forest cover to combat global warming and improve urban cooling.

The NAP complements these mitigation efforts by addressing the long-term impacts of climate change and increasing the resilience of urban areas ([Ministry of Environment, 2016](#)). The NAP's urban adaptation strategies include measures to address the increased frequency of extreme weather events and shifts in precipitation patterns that are critical to maintaining thermal comfort in cities. The plan's emphasis on public consultation and continuous monitoring ensures that adaptation strategies are responsive to emerging challenges and that urban planning integrates climate resilience into its core objectives. This approach is consistent with the GEF's focus on reducing UHIE and promoting sustainable infrastructure through NbS, such as green facades and urban tree cover, which are essential to mitigating the effects of climate change on urban environments.

Furthermore, Brazil's commitment to energy efficiency is evident in the Alliance Program for Energy Efficiency ([Government of Brazil, 2019](#)), which works with the industrial sector to foster a culture of energy conservation. This program not only reduces electricity consumption in energy-intensive industries but also promotes the adoption of energy management practices that can be extended to urban cooling initiatives. By reducing overall energy demand, particularly in urban areas, this program supports the GEF's goals of implementing energy-efficient cooling systems and reducing the UHIE.

Côte d'Ivoire

Côte d'Ivoire has demonstrated a strong commitment to addressing climate change through comprehensive policies and strategic plans aimed at reducing GHG emissions, enhancing energy efficiency, and promoting sustainable urban development. Central to these efforts is the country's updated NDC, which pledges a 30.41% reduction in GHG emissions by 2030 compared to business-as-usual scenarios, with the potential to achieve a 98.95% reduction with international support ([Government of Côte d'Ivoire, 2022](#)). As part of its sectoral targets, Côte d'Ivoire has set ambitious goals, including increasing energy efficiency by 20% in the building sector and in the retail and public services sector by 2030. Additionally, the country aims to reduce the rate of deforestation by 70% by 2030 compared to 2015 levels and implement a conversion of 2 million hectares of additional forest land.

The country is integrating NbS into urban development to address the rising demand for cooling and counteract the UHIE. Urban resilience projects, such as the Sustainable and Inclusive Secondary Cities Project and the Abidjan Urban Mobility Initiative, are designed to improve infrastructure while incorporating green spaces and sustainable land management practices. Furthermore, it is taking steps to regulate energy consumption in buildings through the development of MEPS and labelling policies for domestic refrigerators and air conditioners. This initiative will enhance energy efficiency, reduce cooling-related emissions, and contribute to the global transition away from high-GWP hydrofluorocarbons (HFCs).

In addition, Côte d'Ivoire is in global efforts to reduce short-lived climate pollutants (SLCPs), including black carbon and methane. Since 2013, the country has collaborated with the Climate and Clean Air Coalition (CCAC) to establish reduction targets of 58% for black carbon and 30% for methane by 2030. These efforts complement NbS for cooling pollutants that exacerbate warming in urban areas. Côte d'Ivoire's Readiness Preparation Proposal (R-PP) under the REDD+ mechanism also highlights strategies for afforestation, sustainable forest management, and agroforestry, contributing to both climate mitigation and urban cooling.

The nation is also enhancing its policy framework on sustainable urban planning. The PNAEE, developed under the ECOWAS EEEP, prioritizes energy-efficient buildings, passive cooling strategies, and sustainable infrastructure. Additionally, the Cities-IAP initiative in Abidjan promotes integrated urban planning methods to reduce emissions and improve air quality through NbS. Together, these initiatives reinforce Côte d'Ivoire's commitment to NbS and energy-efficient design to create cooler, more resilient urban environments while contributing to the country's broader emission reduction and climate adaptation goals.

Cambodia

Cambodia's policy framework shows a strong alignment with the NCC project's focus on sustainable cooling through a comprehensive set of initiatives targeting energy efficiency and thermal comfort from both mitigation and adaptation perspectives. Cambodia's National Cooling Action Plan (NCAP), published in 2023, sets targets for the cooling sector to reduce emissions by 17% and electricity consumption for cooling by 20% by 2040 compared to a business-as-usual scenario. It includes the recommendations on passive cooling solutions for buildings, and states that passive cooling strategies (including nature-based solutions) are a key implementation focus to provide thermal comfort and reduce cooling demands in buildings. By accelerating passive cooling practices, Cambodia is supporting the GEF's goal of creating a zero-emissions built environment, particularly in dense city areas where cooling consumption is growing.

In addition, Cambodia's National Energy Efficiency Policy (NEEP) 2022 sets specific reduction targets in buildings: 34% for the residential sector and 25% for commercial buildings by 2030. NEEP aims to enhance Cambodia's energy security by controlling the pace of energy demand expansion and promoting diversification of the nation's energy supply portfolio. Given the largest energy consumption in the residential sector in Cambodia due to pollution growth and urbanization, it encourages a greater focus on energy efficiency of housing. The implementation of NEEP directly contributes to the GEF's goals to achieve energy-efficient and resilient buildings through sustainable cooling.

Furthermore, Roadmap for Low-Carbon and Climate-Resilient Buildings and Construction in Cambodia Vision 2050 was launched in 2022 by the Ministry of Land Management Urban Planning and Construction (MLMUPC) with the support of UNEP/GlobalABC and UNDP. This roadmap suggests a number of actions in eight key areas (urban planning and development, new buildings, building refurbishment, building operations, appliances and systems, materials, resilience, clean energy) with targets for 2030, 2040, and 2050 based on a comprehensive sector analysis and multi-stakeholder consultations. This sets the clear scenario to decarbonize the building sector in Cambodia as well as catering to the resilience of buildings to achieve the Paris Agreement 2050. The vision aligns with the GEF's mission to achieve climate resilience and energy mitigation through sustainable cooling.

South-south and triangular cooperation

The project will inherently promote South-South and triangular cooperation by fostering collaboration between Côte d'Ivoire, Cambodia, and Brazil, three countries representing diverse geographies across three continents. By working across different climatic, socio-economic, and policy contexts, the project will create opportunities for mutual learning, knowledge exchange, and capacity-building among participating countries. As part of its communication and outreach strategy, the project will facilitate webinars and knowledge-sharing events, where representatives from each country will share their experiences, best practices, and lessons learned in implementing project activities. These exchanges will not only strengthen regional and global cooperation but also help identify scalable and context-specific approaches that can be adapted to other regions facing similar cooling challenges. The lessons learned of the project will be disseminated through the participants of the NCGW contributing to the broader global dialogue on sustainable cooling solutions.

C4. Alignment with the Multilateral Environmental Agreements.

The project aligns with Multilateral Environmental Agreements (MEAs) by advancing nature-based solutions for cooling, which contribute to the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) by reducing greenhouse gas emissions from energy-intensive cooling systems, the Convention on Biological Diversity (CBD) by enhancing urban biodiversity and ecosystem resilience, and the United Nations Convention to Combat Desertification (UNCCD) by promoting land restoration and mitigating the urban heat island effect (see table 11). Through these contributions, the project supports global commitments to climate action, biodiversity conservation, and sustainable land management, reinforcing synergies between international environmental frameworks.

MEA	Agreement	Alignment with MEA
Paris (UNFCCC)		The accomplishment of the Paris Agreement requires the incorporation of energy-efficient cooling in Nationally Determined Contributions (NDCs) to reduce emissions. It has also promoted the phasing down HFCs (complementing the Kigali Amendment) to cut climate pollutants. Adaptation strategies are also crucial to promote passive cooling and urban greening for heat resilience.
Convention on Biological Diversity (CBD)		NbS for cooling align with several targets of the Kunming-Montreal Global Biodiversity Framework (GBF) including Target 2, Target 8, and Target 12.
United Nations Convention to Combat Desertification (UNCCD)		The Land Degradation Neutrality (LDN) programs promote afforestation & reforestation to reduce extreme heat.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed during Project Preparation as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

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

Yes

If the project expects to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment, please indicate in which results area(s) the project is expected to contribute to gender equality:

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

Yes

Improving women's participation and decision-making; and/or

Yes

Generating socio-economic benefits or services for women.

Yes

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

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during Project Preparation as required per GEF policy, their relevant roles to project outcomes has been clearly articulated in the Project Description (Section B) and that a Stakeholder Engagement Plan has been developed before CEO endorsement.

Yes

Select what role civil society will play in the project:

Consulted only; Yes

Member of Advisory Body; Contractor;

Co-financier;

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

Executor or co-executor;

Other (Please explain)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided information regarding Environmental and Social risks associated with the proposed project or program, including risk screenings/ assessments and, if applicable, management plans or other measures to address identified risks and impacts (this information should be presented in Annex E).

Yes

Please provide overall Project/Program Risk Classification

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described during Project Preparation in the Project Description and that these activities have been budgeted.

Yes

Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate and these benefits translate in supporting the achievement of global environmental benefits (GEF Trust Fund) or adaptation benefits (LDCF, SCCF). This section identifies the direct beneficiaries from the project.

Implementation of NbS for cooling in the challenge winning cities will reduce extreme heat in identified hot spots of cities and provide natural cooling to the urban poor, who otherwise lack access to mechanical space cooling. Thus, NbS provide several socioeconomic benefits like providing cooling needs equitably and sustainably, reduced health related illness due to exposure to extreme heat, reduced mortality rates, improved health and productivity rates.

Areas in a city experiencing UHIE are more vulnerable during heat waves in summer months. Cooling provided by NbS reduces the disaster risk, brings back the lost biodiversity in cities and contributes towards making heat resilient cities. Implementation of NbS also helps in reducing the risk of floods in cities. Benefits of reduced cooling energy demand and hence GHG savings in challenge winning cities shall contribute directly towards global environmental benefits. These have been quantified in the core indicators section.

It is estimated that the project will generate savings of USD 1.5 million per country per year due to reduced cooling demand. This calculation is based on today's simple value of money (USD per kWh).

ANNEX A: FINANCING TABLES

GEF Financing Table

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

GEF Agency	Trust Fund	Country/ Regional / Global	Focal Area	Programm ing of Funds	Grant / Non- Grant	GEF Project Grant(\$)	Agency Fee(\$)	Total GEF Financing (\$)
UNEP	GET	Global	Climate Change	CC Global/Re gional Set- Aside	Grant	3,000,000.0 0	285,000 .00	3,285,000.00
Total GEF Resources (\$)						3,000,000.0 0	285,000 .00	3,285,000.00

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount (\$)

50000

PPG Agency Fee (\$)

4750

GEF Agency	Trust Fund	Country/ Regional / Global	Focal Area	Programming of Funds	PPG(\$)	Agency Fee(\$)	Total PPG Funding(\$)
UNEP	GET	Global	Climate Change	CC Global/Regional Set-Aside	50,000.00	4,750.00	54,750.00
Total PPG Amount (\$)					50,000.00	4,750.00	54,750.00

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total(\$)
Total GEF Resources (\$)					0.00

Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing(\$)	Co-financing(\$)
CCM-1-4	GET	3,000,000.00	30,670,000.00
Total Project Cost (\$)		3,000,000.00	30,670,000.00

Confirmed Co-financing for the project, by name and type

Please include evidence for each co-financing source for this project in the tab of the portal

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount(\$)
Recipient Country Government	Ministry of Environment Brazil	In-kind	Recurrent expenditures	1,000,000.00
Others	Sustainable Energy for All	In-kind	Recurrent expenditures	770,000.00
GEF Agency	United Nations Environment Programme (UNEP) Cool Coalition	In-kind	Recurrent expenditures	1,500,000.00
Private Sector	VITO	In-kind	Recurrent expenditures	50,000.00
Private Sector	Urban Land	Equity	Investment mobilized	17,300,000.00
Recipient Country Government	Ministry of Environment Brazil	Public Investment	Investment mobilized	7,350,000.00
Recipient Country Government	Ministry of Environment, Sustainable Development and Ecological Transition, Cote d'Ivoire	In-kind	Recurrent expenditures	1,000,000.00
Private Sector	SNEDAI-MIKAF (Cote d'Ivoire)	In-kind	Recurrent expenditures	500,000.00
Private Sector	OHEL International (Cote d'Ivoire)	In-kind	Recurrent expenditures	1,200,000.00
Total Co-financing (\$)				30,670,000.00

Please describe the investment mobilized portion of the co-financing

In addition to the co-financing sources provided in the table above, the project will mobilize investments from the private sector investments during its execution, in line with the GEF guidelines on co-financing (FI/GN/01, paragraph 9) (GEF, 2018). These investments will primarily come from private investors involved in the proposals of winning proponents, who are likely to be private developers. To be selected for the challenge, they will be required to provide co-financing at a 1:6 ratio. This is expected to generate approximately \$0.9M in additional co-finance, distributed across all components (C1–C4). The final co-financing amounts

will depend on the selected proponents, with a 1:6 in co-finance ratio anticipated (e.g., \$600K co-finance for each \$100 K GEF grant), particularly for the deep dive proponents. A good example of the type of private co-financing the project will mobilize is the contribution from Urban Land for activities in Cambodia, which takes the form of equity investments. Further, in addition to mobilizing co-financing from the private sector and developers, the project will also seek to leverage additional investments (for instance, in the case of Cote d'Ivoire, private developers such as OHEL International and SNEDAI Group will be developing construction projects worth 12 million USD and 300 million USD respectively over the course of implementation of the NCC project. Meanwhile, their in-kind support in co-development of knowledge products as well as creation of multi-stakeholder platforms has been included as co-financing).

The Cool Coalition already engages with a broad network of private sector entities, including manufacturers, district cooling utilities, energy efficiency and cooling technology providers, engineering and consulting firms, finance and investment actors, developers and foundations. This network supports the Global Cooling Pledge and provides a platform to raise awareness of the business case for investing in nature-based sustainable cooling solutions while addressing gaps in knowledge that currently limit capital flow to NbS solutions. Building on two on-going efforts, the existing partnership with the IFC's Sustainable Cooling Initiative and the Beat the Heat COP30 initiative, the project will seek additional co-financing from technology providers and private sector companies. The project will primarily benefit from IFC's Sustainable Cooling Initiative in its focus on cooling for green buildings. The pre-feasibility studies of the pilot projects will be shared with IFC to explore potential investment opportunities, while also leveraging IFC's five modes of engagement: 1) providing thought leadership; 2) developing transformative cooling systems; 3) enhancing investment readiness of innovators and adopters of cooling solutions; 4) de-risking finance; and 5) operationalizing and scaling up investments.

The project will also leverage a partnership with Google as described in the support letter provided by them.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	4/29/2025	Ersin Esen		ersin.esen@un.org
Project Coordinator	4/29/2025	Asher Lessels		asher.lessels@un.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name of GEF OFP	Position	Ministry	Date (Month, day, year)
Larissa Sosthène Kouadio	Technical Advisor of Finances and Budget Minister	Ministry of Finance and Budget	9/17/2025
San Vanty	Permanent Secretary of State	Kingdom of Cambodia	9/30/2025
Larissa Sosthène Kouadio	Technical Advisor of	Ministry of Finance	9/17/2025

	Finances and Budget Minister	and Budget	
San Vanty	Permanent Secretary of State	Kingdom of Cambodia	9/30/2025
Livia Farias Ferreira de Oliveira	GEF Operational Focal Point for Brazil; General Coordinator for Sustainable Finance	Ministry of Finance	11/28/2025

ANNEX C: PROJECT RESULTS FRAMEWORK

Please indicate the page number in the Project Document where the project results and M&E frameworks can be found. Please also paste below the Project Results Framework from the Agency document.

1. Core indicators

GEF core indicator	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section B6)
6	Greenhouse Gas Emissions Mitigated (metric ton of CO ₂ e)	0	0	736,640	- MRV system reports. - Emissions tracking tools and frameworks. - Project activity reports.	Climate risk, environmental and social risk.
11	Number of direct beneficiaries disaggregated by sex	0	0	621 (50% women)	Relevant performance indicators on beneficiaries from the Nature for Cooling Challenge, disclosed in Half Yearly Progress/ Project Implementation Review (PIR) annual reports.	Environmental and social risk, stakeholder engagement risk

2. Outcome indicators

Outcome	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section B6)
Outcome 1: Enhanced public-private engagement in the Cool Coalition	# of new institutions engaged in the NCWG, including public and private	0	12 institutions (at least 4 stakeholders per country)	30 institutions (at least 4 governmental, 2 private sector, and 4	- Dialogue attendance sheets and participant lists. - Event reports	Climate risk. Environment and social risk.

Nature for Cooling working group (NCWG) leads to increased knowledge and understanding of NbS for cooling and addressing extreme heat at the global, national, and local level	sector actors, financial institutions, and development partners			to other entities per country)	and summaries. - Structured feedback surveys from stakeholders. - Partnership records maintained by NCWG.	Political and governance risk. Strategies and policies risk. Stakeholder engagement risk.
Outcome 2 (i): Private developers and public institutions engage in the Nature for Cooling Challenge, adopting NbS for cooling in their projects and demonstrating measurable changes in practices to address extreme heat.	# of initiatives using rapid assessments tool, guidelines, insights from the country clinics and support received to enhance the initial project proposal	0	0	12	- Tool usage log by proponents. - Reports or case studies documenting how the tool was used. - Workshop and country clinic attendance records with details on tool dissemination.	Political and governance risk. Macro-economic risk. Institutional capacity for implementation and sustainability risk. Stakeholder engagement risk.
Outcome 2 (ii): In the three challenge countries, the 12 winning proponents take steps to promote an enabling environment for scale-up of and drive increased investment for NbS for cooling and addressing extreme heat						
Outcome 3: Three (3) deep dive proponents advance the project design and preparation of NbS for cooling and addressing extreme heat, providing proof of concept for private sector engagement and the enabling regulatory environment needed for implementation.	# of tendering documents that include integration of NbS for cooling and addressing extreme heat	0	0	3 (minimum 1 per country)	- Revised procurement documents or tender guidelines incorporating NbS criteria - Charrettes/study tour/workshop reports summarizing participant learning outcomes.	Political and governance risk. Macro-economic risk. Institutional capacity for implementation and sustainability risk. Fiduciary risk.

	# of cities integrating monitoring frameworks to track NbS cooling and extreme heat adaptation into official municipal frameworks	0	0	3	- Revised procurement documents or tender guidelines incorporating NbS criteria - Charrettes/study tour/workshop reports summarizing participant learning outcomes.	Stakeholder engagement risk.
Outcome 4: National governments (Brazil, Cambodia, Côte d'Ivoire) take steps to adopt policies that encourage subnational governments, developers, design professionals, financial institutions, industry and civil society to implement NbS for cooling and addressing extreme heat	# of national strategies, policies, planning documents or public procurement guidelines that reference NbS/ecosystem approaches for cooling and addressing extreme heat	0	0	4	- Official NDCs, NBSAPs, or other strategic documents with references to NbS. - Government announcements or reports documenting updates. - Meeting records from relevant consultations.	Political and governance risk. Strategies and policies risk. Institutional capacity for implementation and sustainability risk. Stakeholder engagement risk.

3. Output indicators

Output	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks
Output 1.1. Partnerships: Government officials, private sector actors, and civil society gain increased opportunities for structured	# of visitors / users of resource library per year	0	350	1,000	- Website analytics reports (Google Analytics, server logs, or internal tracking tools) - Reports summarizing user engagement trends	(see section 5) Stakeholder Engagement risk.

engagement, coordination, and knowledge exchange on NbS and ecosystem-based approaches for cooling and addressing extreme heat

Output 1.2: Knowledge co-development: Tools and training materials for supporting the scale-up implementation of NbS for cooling projects are shared through the NCWG with countries, local actors and key support organizations.

of Rapid Assessment tools developed and made available to stakeholders

0

0

1

- Finalized toolkits or reports publicly available on websites or platforms
- Documentation of dissemination activities (e.g., emails, newsletters, press releases)
- Stakeholder feedback or usage reports confirming access to the tool

Strategies and Policies risk.

Institutional capacity for implementation and sustainability risk.

guidelines on investment-ready NbS projects developed and disseminated

0

0

1

- Published guidelines available on project websites or digital platforms
- Download statistics from knowledge-sharing platforms
- Email distribution records and stakeholder dissemination reports

Strategies and Policies risk.

Institutional capacity for implementation and sustainability risk.

Output 1.3: Awareness and ambition raising:

Government officials, private sector actors and civil society have improved access to knowledge and international platforms that promotes greater ambition and scaled-up action on NbS for cooling and addressing extreme heat.

of communication and outreach activities executed under the NCC

0

5

10

- Records of press releases, newsletters, and social media campaigns
- Reports on events, webinars, or public engagements held
- Media coverage logs tracking news articles, interviews, and promotional content
- Analytics from digital platforms (website visits, social media engagement, email open rates)

Institutional capacity for implementation and sustainability risk.

Stakeholder Engagement risk.

Output 2.1: Challenge: The first “Nature for Cooling Challenge (NCC)” is launched, providing private developers and public institutions with opportunities to accelerate the adoption, scale-up and investment in NbS for cooling and addressing extreme heat.	# of attendees to the Official Launch and Call for Proposals disaggregated by sex and by type (e.g., ministries, financiers), at dialogues events	0	150 (50 per country)	150 (50 per country)	- Monitoring reports tracking communication effectiveness and reach - Attendance sheets disaggregated by sex and stakeholder category - Post-event reports summarizing engagement levels - Event proceedings, photos, and session recordings	Climate risk. Political and Governance risk. Stakeholder Engagement risk.
Output 2.2: Select and Award: Countries whose project proposals on NbS for cooling and addressing extreme heat are selected have access to tailored support to enhance proposal feasibility and impact.	# of project applications submitted for the call incorporating innovative NbS for cooling and addressing extreme heat in the Challenge	0	At least 20 proposals (per country)	At least 20 proposals (per country)	- Official records of submitted applications through the challenge's submission platform - Review committee reports on project proposals received - - Annual progress reports.	Environment and social risk. Strategies and policies risk. Stakeholder engagement risk.
	# of proposals selected for light touch or deep dives support	0	0	4 selected in each country (three light touch and one deep dive)	- - Evaluation committee reports. - Lists of selected proposals with justifications. - Communication materials for proponents.	
	# of letters of interest (LoI) signed by the selected proponents formalizing the commitment to the NCC.	0	0	12 letters	- - Signed letter. - Published partnership agreements. - Communications announcing LOIs signings.	Political and Governance risk. Strategies and Policies risk. Fiduciary: Financial Management and Procurement risk. Stakeholder Engagement risk.

Output 2.3: Training and Implementation Support: winning proponents gain experience in using rapid assessment tool, guidelines and knowledge to co-create inclusive, gender-responsive, and investment-ready NbS for cooling projects.	# of individuals trained or supported in using the Rapid Assessment Tool (sex-disaggregated)	0	0	48 (16 per country)	- Training attendance records with gender disaggregation. - Training reports documenting sessions, methodologies, and participant feedback - Workshop materials and session recordings for reference	Climate risk. Political and Governance risk. Institutional capacity for implementation and sustainability risk. Stakeholder Engagement risk.
				50% trainees are women		
Output 3.1 Grants: Deep dive proponents have access to targeted grants functioning as catalytic investments to support the implementation of NbS for cooling projects.	# of workplans for the use of the grant developed and implemented	0	0	3	- Finalized and published progress reports - Press releases - Publication or presentations with impacts of the use of the grant	Climate risk. Political and governance risk. Strategies and policies risk. Institutional capacity for implementation and sustainability risk. Fiduciary risk. Stakeholder Engagement risk.
Output 3.2: Deep dive proponents have access to design and procurement specifications for supporting projects to be tendered.	# of design professionals participating in design charrettes per country	0	0	36 (12 participants per country)	- Attendance records from design charrettes. - Workshop reports summarizing discussions, outcomes, and design concepts developed	Climate risk. Political and governance risk. Strategies and policies risk. Institutional capacity for implementation and sustainability risk. Fiduciary risk. Stakeholder Engagement risk.

Output 3.3: Monitoring and Reporting: a monitoring and reporting framework is adopted by deep-dive proponents for quantifying their proposal's cooling effects, GHG emission reductions, and co-benefits for resilience and biodiversity.	# of proponents participating in the study tour to learn from best practices in NbS cooling and addressing extreme heat	0	0	21 (7 per country)	- Official study tour itinerary and participant list - Travel reports and participant reflections on key learnings	Climate risk. Political and Governance risk. Strategies and Policies risk. Institutional capacity for implementation and sustainability risk.
	# of NbS-incorporated projects are ready for tendering	0	0	3	- Published tender documents. - Records of procurement processes. - Documentation of awarded contracts.	Stakeholder Engagement risk. Environment and Social risk. Political and Governance risk. Macro-economic risk.
	# of impact quantification reporting frameworks developed	0	0	1	- Finalized and published impact assessment frameworks - Technical reports detailing the methodologies and metrics	Fiduciary: Financial Management and Procurement risk. Strategies and Policies risk. Institutional capacity for implementation and sustainability risk.
	# of participants trained in implementing the NbS monitoring framework (sex-disaggregated)	0	0	36 (12 participants per country)	- Training attendance records disaggregated by sex - Pre- and post-training assessments on monitoring	Climate risk. Political and Governance risk. Stakeholder Engagement risk.

					framework application	
					- Workshop reports and participant feedback	
		0	0	50% participants are women		
				3		
Output 3.4: Local Scaling: Local government officials have access to tailored recommendations to promote the integration of NbS into future design projects, including incentives for developers and for urban planning and building design.	# of guidelines for integrating NbS into urban planning and building design developed and disseminated	0	0	3	- Published guidelines available online or in print - Download statistics from knowledge-sharing platforms - Email distribution records and stakeholder dissemination reports	Institutional capacity for implementation and sustainability risk.
Output 4.1: Multi-stakeholder platforms: multi-stakeholder platforms promoting policy-coherence on NbS/ecosystem approaches for cooling and addressing extreme heat are established to engage national government officials, civil society, private sector and financial institutions.	# of scenario-based assessments conducted on the climate, GHG mitigation, and biodiversity benefits of NbS for cooling and addressing extreme heat	0	3	3	- Assessment reports detailing modelling outcomes and projections - Datasets and methodology documentation - Publications or presentations of findings at conferences or workshops	Strategies and Policies risk. Institutional capacity for implementation and sustainability risk.
Output 4.2: Procurement guidelines and policies: National governments have access to policy, procurement guidelines, and tools and receive training on how to integrate NbS for cooling and addressing extreme heat in public procurement and planning.	# of design/procurement guidelines for NbS in urban and building projects developed and disseminated	0	0	3	- Finalized guideline documents available for use - Download statistics from knowledge-sharing platforms - Email distribution records and stakeholder dissemination reports	Institutional capacity for implementation and sustainability risk.

4.3 Financial incentives dialogue: Policy makers in participating countries have access to tailored recommendations on financial incentives to promote nature-based cooling, developed by winning proponents.	# of National Financial Dialogues organized	0	0	3	- Event registration records and official agendas - Reports summarizing event outcomes and key discussions	Climate risk. Political and Governance risk. Strategies and Policies risk. Institutional capacity for implementation and sustainability risk. Stakeholder Engagement risk.
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ANNEX D: STATUS OF UTILIZATION OF PROJECT PREPARATION GRANT (PPG)

Provide detailed funding amount of the PPG activities financing status in the table below:

Project Preparation Activities Implemented	GETF/LDCF/SCCF Amount (\$)		
	Budgeted Amount	Amount Spent To date	Amount Committed
Consultancies and contracts to develop program and/or project options (GEF Project development support for preparation of project documents, including work plan and budget, technical terms of reference, among others)	30,000.00	20,000.00	10,000.00
Consultancies and contracts to develop program and/or project options (Nature and cooling technical specialists providing technical inputs to project development)	15,000.00	5,000.00	10,000.00
Travel (for local experts for consultations and discussions with interested parties and Stakeholders)	5,000.00	5,000.00	0.00
Total	50,000.00	30,000.00	20,000.00

ANNEX E: PROJECT MAP AND COORDINATES

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

Location Name	Latitude	Longitude	GeoName ID
Brasilia	-15.77972	-47.92972	3,469,058

Location Description:

Capital of Brazil

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Yamoussoukro	6.82055	-5.27674	2,279,755

Location Description:

Capital of Cote d'Ivoire

Activity Description:

Location Name	Latitude	Longitude	GeoName ID
Phnom Penh	11.569583333333	104.92102777778	1,830,103

Location Description:

Activity Description:

Please provide any further geo-referenced information and map where project interventions are taking place as appropriate.

Figure 12 - Map of Brazil

(Source: <https://www.worldometers.info/maps/>)



Figure 1 - Map of Côte d'Ivoire

(Source: <https://www.worldometers.info/maps/>)



Figure 10 - Map of Cambodia

(Source: <https://www.worldometers.info/maps/><https://www.worldometers.info/maps/>)



ANNEX F: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

Attach agency safeguard screening/assessment report(s), including ratings of risk types and overall project/program risk classification as well as any management plans or measures to address identified risks and impacts.

Title

Annex F

ANNEX G: BUDGET TABLE

Please explain any aspects of the budget as needed here

ANNEX G: BUDGET TABLE

GEF budget

Annex G: GEF Format Budget

Comp onent	Comp onent	Comp onent	Comp onent	M&E	PMC
1	2	3	4		

GEF budget category & detailed description	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Subtotal	M&E	PMC	Total	Responsible entity
02. Goods	\$ 25,000				\$ 25,000		\$ 50,000	\$ 75,000	
Website (domain, consultancy)	\$ 25,000				\$ 25,000			\$ 25,000	UNEP Cities Unit
Office supplies, Admin, Misc							\$ 10,000	\$ 10,000	UNEP Cities Unit
Computers and IT equipment for the Project Team							\$ 40,000	\$ 40,000	UNEP Cities Unit
04. Grants/Subgrants	\$ 130,000	\$ 105,000	\$ 1,405,000	\$ 190,000	\$ 1,830,000			\$ 1,830,000	
SEforALL - Global co-executing partner	\$ 30,000	\$ 30,000	\$ 220,000	\$ 60,000	\$ 340,000			\$ 340,000	UNEP Cities Unit
Global co-executing Partner - Challenge design		\$ 20,000			\$ 20,000			\$ 20,000	UNEP Cities Unit
In-country co-executing partner (Brazil) - grant for winning proponents			\$ 340,000		\$ 340,000			\$ 340,000	UNEP Cities Unit
In-country co-executing partner (Côte d'Ivoire) - grant for winning proponents			\$ 340,000		\$ 340,000			\$ 340,000	UNEP Cities Unit
In-country co-executing partner (Cambodia) - grant for winning proponents			\$ 340,000		\$ 340,000			\$ 340,000	UNEP Cities Unit
Global co-executing partner - Tool Developer	\$ 65,000	\$ 35,000			\$ 100,000			\$ 100,000	UNEP Cities Unit
Global co-executing partner - Monitoring framework	\$ 25,000		\$ 25,000		\$ 50,000			\$ 50,000	UNEP Cities Unit
In-country co-executing partner (Brazil)	\$ 3,333	\$ 6,667	\$ 46,667	\$ 43,333	\$ 100,000			\$ 100,000	UNEP Cities Unit
In-country co-executing partner (Cote d'Ivoire)	\$ 3,333	\$ 6,667	\$ 46,667	\$ 43,333	\$ 100,000			\$ 100,000	UNEP Cities Unit
In-country co-executing partner (Cambodia)	\$ 3,333	\$ 6,667	\$ 46,667	\$ 43,333	\$ 100,000			\$ 100,000	UNEP Cities Unit

	\$			\$	\$	\$	
	60,0			60,00	70,0	130,0	
07. Contractual services (company)	00			0	00	00	
	\$			\$		\$	UNEP
	60,0			60,00		60,00	Cities
Communication Agency	00			0		0	Unit
					\$	\$	
					25,0	25,00	
Independent mid-term evaluation					00	0	UNEP
					\$	\$	
					40,0	40,00	
Independent terminal evaluation					00	0	UNEP
Procurement of design and publication					\$		UNEP
services of annual reports (ME 1) and the					5,00	\$	Cities
final report (ME 4)					0	5,000	Unit
	\$			\$	\$	\$	
	76,3			76,36	3,63	80,00	
08. Contractual services (individuals)	64			4	6	0	
	\$			\$		\$	UNEP
	40,0			40,00		40,00	Cities
Communications Expert	00			0		0	Unit
	\$			\$	\$	\$	UNEP
	36,3			36,36	3,63	40,00	Cities
GESI Expert	64			4	6	0	Unit
	\$	\$	\$	\$	\$	\$	
	48,8	9,83	23,5	42,7	125,0	125,0	
09. International Consultants	38	3	95	34	00	00	
	\$	\$	\$	\$	\$	\$	UNEP
	37,4	6,88	9,40	11,3	65,00	65,00	Cities
Senior Technical Lead - NbS Planning	10	0	4	06	0	0	Unit
	\$	\$	\$	\$	\$	\$	UNEP
Technical Expert (consultant) - NbS in	11,4	2,95	14,1	31,4	60,00	60,00	Cities
Buildings	29	2	90	29	0	0	Unit
	\$	\$	\$	\$	\$	\$	
	77,1	84,2	78,5	240,0		240,0	
10. Local Consultants	43	86	71	00		00	
	\$	\$	\$	\$	\$	\$	UNEP
	25,7	28,0	26,1	80,00		80,00	Cities
NbS Technical Specialist (Brazil)	14	95	90	0		0	Unit
	\$	\$	\$	\$	\$	\$	UNEP
	25,7	28,0	26,1				
	14.2	95.2	90.4	80,00		80,00	Cities
NbS Technical Specialist (Côte d'Ivoire)	9	4	8	0.00		0.00	Unit
	\$	\$	\$	\$	\$	\$	
	25,7	28,0	26,1				
	14.2	95.2	90.4	80,00		80,00	Cities
NbS Technical Specialist (Cambodia)	9	4	8	0.00		0.00	Unit
	\$	\$	\$	\$	\$	\$	
	74,4	25,3	11,0	21,6	132,5	57,8	280,0
11. Salary and benefits/Staff Costs	74,4	25,3	11,0	21,6	30.19	89,6	00.00

	48.9	72.6	73.8	34.8		69.8	00.0		
	3	4	3	0		1	0		
	\$	\$	\$	\$		\$	\$		
	74,4	25,3	11,0	21,6	\$	57,8	33,6	\$	UNEP
	48.9	72.6	73.8	34.8	132,5	69.8	00.0	224,0	Cities
Chief Technical Advisor	3	4	3	0	30.19	1	0	00.00	Unit
							\$		
							56,0	\$	UNEP
							00.0	56,00	Cities
Administrative and Financial Assistant							0	0.00	Unit
	\$	\$	\$						
	11,2	50,6	28,1		\$			\$	
	50.0	25.0	25.0		90,00			90,00	
12. Training, Workshops, Meetings	0	0	0		0.00			0.00	
	\$	\$	\$						
	11,2	50,6	28,1		\$			\$	UNEP
	50.0	25.0	25.0		90,00			90,00	Cities
Venues	0	0	0		0.00			0.00	Unit
	\$	\$	\$			\$			
	63,5	39,7	31,7		\$	15,0		\$	
	29.4	05.8	64.7		135,0	00.0		150,0	
13. Travel	1	8	1		00.00	0		00.00	
	\$	\$	\$						
	63,5	39,7	31,7		\$			\$	UNEP
	29.4	05.8	64.7		135,0			135,0	Cities
Travel	1	8	1		00.00			00.00	Unit
						\$			
						15,0		\$	UNEP
Travel for Core team / PMU, incl. PSC						00.0		15,00	Cities
meetings						0		0.00	Unit
			\$						
	\$	\$	1,58	\$	\$	\$	\$	\$	
	489,	307,	3,84	332,	2,713,	146,	139,	3,000,	
Grand Total	430	679	4	941	894	506	600	000	

