ADAPTATION FUND

Version: May 2015

PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Building resilience of urban communities in Central America by leveraging Nature-based Solutions (NbS) for adaptation

Countries: Honduras, El Salvador, Guatemala

Thematic Focal Area[1]: Disaster risk reduction and early warning systems

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: United Nations Environment Programme (UNEP)

Executing Entities:

- Ministry of Environment and Natural Resources, El Salvador
- Ministry of Environment and Natural Resources, Guatemala
- Secretariat of Natural Resources and Environment, Honduras

Amount of Financing Requested: 14,000,000 (in U.S Dollars Equivalent)

Project / Programme Background and Context:

Socio-economic context of cities in Central America

1. The Central American region is among the most exposed to climatic phenomena in the world[2] as well as one of the most unequal regions, with Gini coefficients of 38.8 in El Salvador, 48.2 in Honduras and 48.3 in Guatemala[3]. National poverty rates are 62% in Guatemala and 60% in Honduras. These are higher among rural populations – 82% in Honduras, 77% in Guatemala and 49% in El Salvador, disproportionately affecting indigenous populations.[4]

Figure 1. *Map of project countries in Central America.*

2. Countries in Northern Central America are undergoing an important transition, with urban populations increasing at accelerated speed, especially in intermediate cities, bringing pressing challenges as well as opportunities to boost sustained, inclusive and resilient growth.[1] Today, 59 percent of Central America's population lives in urban areas, but it is expected that within the next generation 7 out of 10 people will live in cities, equivalent to adding 700,000 new urban residents every year. At current rates of urbanization, the region's urban population will double in size by 2050, welcoming over 25 million new urban dwellers, calling for better infrastructure, higher coverage and quality of urban services and greater employment opportunities within a climate change context.[5]
3. Challenges stemming from climate variability, poor rainfall distribution and drought are key drivers for temporary and/or permanent migration, reflecting a response to environmental adversity. These migration dynamics generally originate from vulnerable and poor rural areas into urban areas contributing to the unplanned urban sprawl and particularly to the expansion of underserviced and highly risky slums.[3] The growth of urban areas in Northern Central America, including informal settlements, can increase exposure to climate hazards, including flooding and landslides, due to changes in land use, deforestation, and an increase in the population that is located in highly vulnerable

[2] ECLAC, 2015. *Microseguros agropecuarios y gestión integral de riesgos en Centroamérica y la República Dominicana: lineamientos estratégicos para su desarrollo y fortalecimiento*. ECLAC, Ciudad de Mexico, Mexico, 221 pp. Available at: http://hdl.handle.net/11362/39115.

[3] World Bank, 2019. World Bank. (2019b). "Gini index (World Bank estimate) - El Salvador, Guatemala, Honduras." Website. Accessed 4-14-22/ https://data.worldbank.org/indicator/SI.POV.GINI?locations=SV-GT-HN.

[4] BCIE, 2020. BCIE, 2020: *Centroamérica en Cifras.* Banco Centroamericano de Integracion Economica, Tegucigalpa, Honduras, 34 pp. Available at: https://www.bcie.org/novedades/publicaciones/publicacion/centroamerica-en-cifras

[5] World Bank, 2016, Central America Urbanization Review - Making Cities Work for Central America

areas.[6] Much of the urban infrastructure is in poor condition, and will be strained by climate impacts such as extreme precipitation and heat events. How the cities in Honduras, Guatemala and El Salvador prepare for growth in a changing climate will impact their economic and security trajectories.

Climate change context

4. The World Risk Index 2021 ranks Guatemala 10th, El Salvador 18th, and Honduras 34th out of 181 countries in terms of disaster risk[7] and the number of extreme weather events in Central America has increased 3% per year over the past 30 years.[8] The latest Intergovernmental Panel on Climate Change Assessment Report (IPCC - AR6)[9] identifies Central America as the most sensitive tropical region to climate change. As such, Guatemala, Honduras and El Salvador face common challenges regarding climate change impacts in their territories. Cities in Honduras, Guatemala and El Salvador are highly vulnerable to climate change impacts, due to unplanned and rapid urban expansion, where construction has not integrated any possible climate impacts.
5. Trends of increasing surface temperatures and variability of rainfall could impact the hydrologic cycle and various processes of a watershed system. Specific potential impacts include changes in runoff, nutrient enrichment, sediment loading, and evapotranspiration rates in a watershed system.[10] As part of watershed systems and dependent on the watershed dynamics, cities are particularly exposed to those impacts. The exposure to climate hazards, such as fluvial flooding, urban flooding, coastal flooding and heat waves, extreme rainfall and storms, combined with rapid urbanization and lack of climate-sensitive planning, is taking a toll on urban communities, including marginalized urban populations, infrastructure and services. Climate projections show that urban areas in the region are expected to be exposed at higher climate-related trends and thus, a greater number of the urban population will become vulnerable due to the increase of inequality and poverty.[11]

6. ***Past climate trends:*** Past climate trends in the project countries show that the Central America region climate is changing in several ways, including: i) increase in temperature and ii) shifting rainfall patterns and anomalies. The average rate of temperature increase in the region was around 0.2 °C per decade between 1991 and 2021, compared to 0.1 °C per decade between 1961 and 1990. Anomalies of +1 °C to +3 °C were recorded in Guatemala, Honduras and El Salvador, while rainfall anomalies ranged from 50% below normal to 20% above normal.[12] In most parts of the region rain seasons are shortening and the intensity of midsummer droughts[13] is increasing[14]. Droughts that extend over a year or more are also becoming increasingly frequent and severe, mainly because of the increasing frequency and intensity of El Niño events. Concurrently, extreme rainfall events are increasing in frequency and severity because of changes in La Niña.

7. ***Climate projections*:** Climate projections for the region indicate that, by the end of the century, temperatures across Central America are anticipated to continue to increase in future. By the end of the century, temperatures are projected to increase by 3–3.5°C under a medium emissions scenario (RCP4.5) and by as much as 6–7°C under a high emissions scenario (RCP8.5)[15.] At the same time, mean annual rainfall is projected to decrease by 11% on average. These changes will be compounded by further changes in the El Niño-La Niña cycle, which will result in prolonged droughts[16] as well as more frequent and intense extreme rainfall events across the region. Mean annual rainfall is projected to decrease across much of Central America by 2070 for both medium (RCP4.5) and high (RCP8.5) emissions scenarios. In addition to the predicted future trends in mean annual temperature and rainfall, extreme temperatures are predicted to increase in the coming decades (Figure 2). The number of intense rainfall events[17] and extremely intense rainfall events[18] occurring each year is predicted to increase (Figure 3).

[6] Villamarín et al., 2019; CONAVI, 2017
[7] Aleksandrova et al., 2021
[8] IPCC, 2022. Sixth Assessment Report: Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/
[9] IPCC, 2022. Ibid.
[10] Evans B, Lehning D, Corradini K, Petersen G, Nizeyimana E, Hamlett J, Robillard P, Day R (2003) A comprehensive GIS-based modeling approach for predicting nutrient loads in watersheds. J Spatial Hydrol 2(2):1–18
[11] IPCC, 2022. Ibid.
[12] WMO, 2022. State of the Climate in Latin America and the Caribbean 2021. https://library.wmo.int/doc_num.php?explnum_id=11270
[13] The rain season in the Dry Corridor lasts from May to October, interrupted in August by a period of lower precipitation known as the mid-summer drought, *canícula* or *veranillo*.
[14] Rauscher et al., 2008. Extension and intensification of the Meso-American mid-summer drought in the twenty-first century. Climate Dynamics 31:.
[15] Lyra, A., Imbach, P., Rodriguez, D. et al. 2017. Projections of climate change impacts on Central America tropical rainforest. Climatic Change 141.
[16] Rauscher, S.A., Giorgi, F., Diffenbaugh, N.S. et al. Extension and Intensification of the Meso-American mid-summer drought in the twenty-first century. Clim Dyn 31, 551–571 (2008).
[17] Heavy rainfall events are defined as those in which rainfall reaches 50 mm per day.
[18] Extremely heavy rainfall events are defined as those in which rainfall exceeds 50 mm per day.

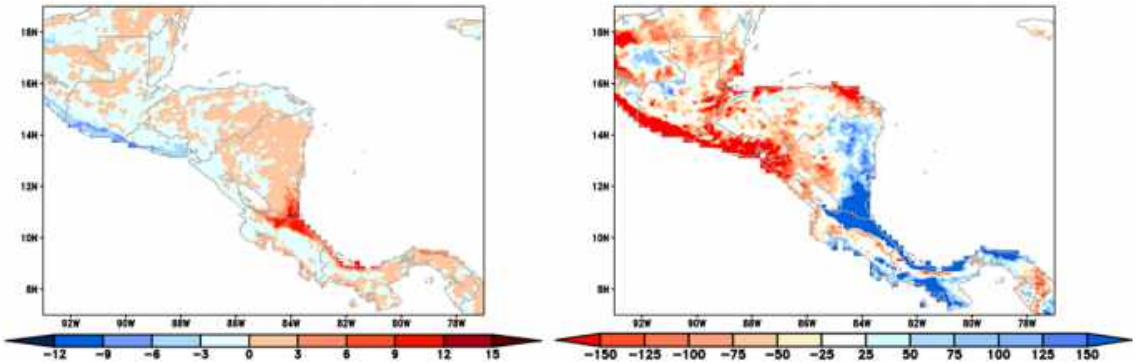


Figure 2. *Projected trends of extreme rainfall indicators for Central America over the period 2021–2050, namely: i) R50mm (days) – heavy rainfall events, where rainfall exceeds 50 mm/day (left); and ii) R90p (mm) – extreme (90th percentile of) rainfall (right).*

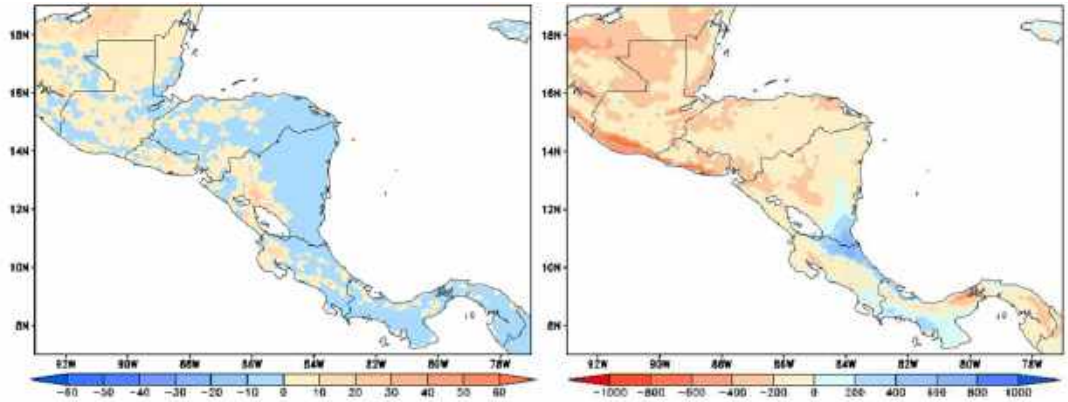


Figure 3. *Projected trends of drought indicators for Central America over the period 2021–2050, namely: i) dry spells, defined as annual largest number of consecutive days when ET < = 0.5*ETP (left); and ii) annual P-ETP in (mm per year, right).*

8. ***Climate hazards:*** Central America's geographic location makes it remarkably prone to hydrometeorological extreme events, including hurricanes, droughts, floods, and El Niño-Southern Oscillation (ENSO). Just from 1992 to 2011, Central America was hit by nearly 70 hurricanes with an average of 8 events per year, hindering sustainable economic growth. Between 2005 and 2014, due to natural disasters, the region had a nominal cumulative loss of around US$5.8 billion, and witnessed more than 3,410 deaths and hundreds of thousands of displaced people.[19] Catastrophic climatic events recently include the 2014-2016 droughts, and the flooding following Hurricanes Eta and Iota that hit Central America within a two-week span in 2020. The later affected 7.5 million people and destroyed over 700,000 ha of crops, which had a devastating effect, especially on farmers' livelihoods in El Salvador, Guatemala, and Honduras, impacting their food security and potentially encouraging migration.[20] In Honduras alone, over 3 million people are now suffering from food insecurity, and 2.8 million people are still in need of humanitarian assistance. In 2020, at least 1.5 million people were displaced in Central America as a consequence of disasters, (including Hurricanes Eta and Iota): 937,000 in Honduras, 339,000 in Guatemala.[21] In particular, urban flooding is directly damaging public assets, affecting people's homes and assets, and destroying livelihoods.

9. *Climate impacts in cities:* Climate change causes cascade of impacts at different scales including watershed, urban and socio-economic scales. Key direct and indirect impacts include: i) reduced access to food supplies or high prices of food resulting in food insecurity; ii) disrupted access to basic services such as water and sanitation; iii) decreased water quality as a result of increasing pollution in rivers and other water ways; iv) damage on critical infrastructure such bridges, highways, hospitals, etc.; and v) loss of lives and livelihoods, vi) health impacts, among others.[26] Ecosystem degradation and the consequent threats to the well-being of urban communities in the region will be exacerbated by the negative effects of climate change. Figure 8 shows the climate impacts chain with cascading impacts.

[19] The World Bank, 2016. Weathering Storms Understanding the Impact of Natural Disasters on the Poor in Central America. Disponible: https://openknowledge.worldbank.org/bitstream/handle/10986/24528/Weathering0sto0r0in0Central0America.pdf?sequence=1&isAllowed=y
[20] IRFC, 2021. Press Release
[21] IRFC, 2021. Ibid.

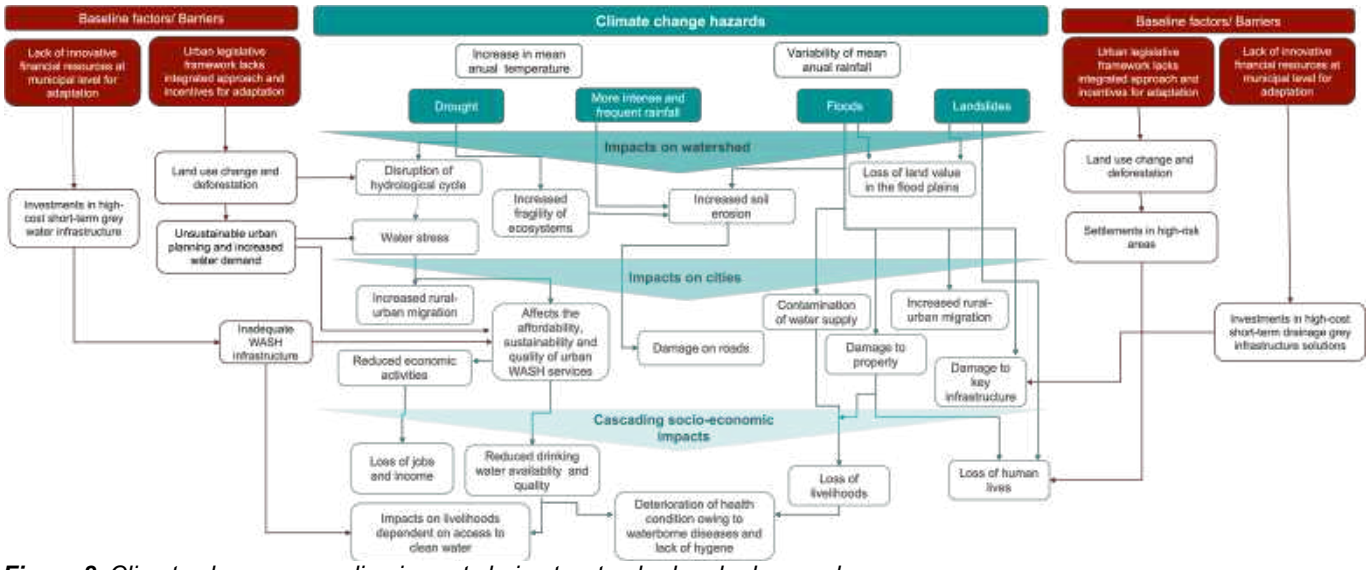


Figure 8. *Climate change cascading impact chain at watershed and urban scale.*

10. In the last three decades, the economic losses due to climate change have accounted for USD 5.7 billion in Honduras, USD 3.5 billion in Guatemala and USD 2.2 billion in El Salvador, with infrastructure and agriculture being the most affected sectors. If ambitious and immediate measures are not implemented, these losses could account for 5.8% to 9% of the national GDP of these Central American Countries.[22] Because of floods, people face job loss, reduced income, which limits their capabilities of preparedness, response, and recovery to subsequent floods. Often, people cope with the situation by bearing substantial debts and loss of assets. The project will be implemented in three cities in each of the countries – Honduras, Guatemala, and El Salvador. Table 1 provides a summary of these tentative cities, based on consultation with the Government of each country. During the concept note formulation phase, in-depth consultation for the validation of the pre-selected cities will be conducted. The selection criteria for the cities are detailed in Annex 1.

Table 1*. Overview of tentative cities, key climate hazards affecting them and the associated impacts for urban communities.*

Selected cities	Socio-economic context			Climate hazards			
	Population (Year)	Annual growth rare	Poverty rate	Flooding	Extreme heat	Water shortage	Land slides
Honduras							
La Lima [23,24:]	84,102 (2020)	1,18%	35%	high	high	low	n/a
San Manuel[25],[26]	68,435 (2020)	3,6%	47%	high	high	low	n/a
Quimistán[27]	60,135 (2021)	4,3%	82%	high	high	medium	medium
El Salvador							
San Salvador Metropolitan Area - AMSS[28] (Soyapango and Ilopango)	1,809,087 (2020)	1,38%	20,47%	high	medium	medium	high
San Miguel[29]	65,921 (2017)	n/a	30,6%	high	medium	medium	high

[22] WFP 2017. Food security and emigration. Why people flee and the impact on family members left behind in El Salvador, Guatemala and Honduras
[23] Plan Municipal de Gestión de Riesgos, Municipio de la Lima, 2017
[24] Interviews with local stakeholders
[25] Plan Municipal de Gestión de Riesgos, Municipio de San Manuel, 2017.
[26] XVII Censo de Población y Vi de vivienda 2013, Municipio de San Manuel
[27] Plan Municipal de Gestión de Riesgos, Municipio de Quimistán, 2017.
[28] Esquema director AMSS, 2017
[29] Plan de desarrollo territorial de la subregión de San Miguel, Volumen 2 Diagnóstico Integrado

San Salvador Metropolitan Area - AMSS[30] (Soyapango and Ilopango)	1,809,087 (2020)	1,38%	20,47%	high	medium	medium	high
Guatemala							
Guatemala City Metropolitan[31]	3,052,521 (2021)	-0.13%	33.3%[32]	high	high	high	medium
Escuintla	156,313 (2018)	3.84%	52.9%	high	medium	high	medium
Port San Jose	23,887 (2018)	2.03%	52.9%	high	medium	high	medium

11. *Drivers of climate vulnerability in urban areas:* Rapid urbanization in the three countries is characterized by the migration of population from rural areas, who settle in peri-urban and marginal areas of the cities at high risk of flooding and landslides, for example in ravines, on hillsides, along rivers or near landfills. These settlements are often informal and illegal, with irregular land tenure, use inadequate building materials and tend to lack basic services like water or sewer systems. In additions, the ineffective implementation of urban development plans, poverty and unsustainable use of resources in medium-sized cities in the region has led to the degradation of urban and peri-urban ecosystems and a decline in the provision of ecosystem services. These conditions are exacerbated by climate change leading to increased vulnerability and exposure of the urban population and economic assets.

12. Key climate hazards affecting the urban areas in the three countries include flooding, landslides, hurricanes, drought and extreme temperature. The associated impacts include: i) reduced access to food supplies or high prices of food resulting in food insecurity; ii) disrupted access to basic services such as water and sanitation; iii) decreased water quality as a result of increasing pollution in rivers and other water ways; iv) damage on critical infrastructure such as bridges, highways, hospitals, etc.; and v) loss of lives and livelihoods, among others.[33] Ecosystem degradation and the consequent threats to the well-being of urban communities in the region will be exacerbated by the negative effects of climate change. **The combination of rising vulnerability and increasing exposure translates to a growth in the number of people and properties at risk from climate change in the cities in the region.**

Problem statement and main barriers for the adoption of ecosystem-based urban adaptation planning

13. Poorly planned urbanisation in combination with climate change puts great pressure on ecosystems, urban communities and critical infrastructure, thus increasing the vulnerability of cities and escalating climate risks such as water scarcity and floods. Traditional approaches to urban development are ill-equipped to cope with the current and future climate change challenges. Thus, urban adaptation planning is constrained by short-term development agendas, lack of reliable information, local capacities, innovative decision support tools and financial strategies. Common adaptation barriers that the participant countries share are[34]:
    - **Barrier 1.** Lack of city-level robust information on climate risk and vulnerability and decision support tools to guide urban adaptation planning.
    - **Barrier 2.** Weak local institutional and community capacities for building resilience of cities via innovative integrated approaches
    - **Barrier 3**. Regulatory framework does not sufficiently incentivize municipalities, private sector actors and local communities to implement measures to adapt to climate change
    - **Barrier 4**. Insufficient funds and access to suitable financial resources for municipalities to invest in ecosystem-based urban adaptation strategies

Proposed adaptation approach: Ecosystem-based urban adaptation planning and climate-resilient infrastructure for cities

14. In response to climate change projections highlighting the increasing risks for cities, there is a need to build the resilience of cities and urban ecosystems so that they are better able to withstand climate stresses. The project will achieve such a change in paradigm by fostering the adoption of ecosystem-based urban adaptation strategies as the preferred model for urban planning and development. To maximise the ecosystem functionality, the urban ecosystem

[30] Esquema director AMSS, 2017
[31] https://www.copresam.gob.gt/wp-content/uploads/2022/04/GUIA_PARA_LA_IMPLEMENTACIN_DEL_PDM-OT_EN_GUATEMALA-1.pdf
[32] All poverty rates in Guatemala refer to department level poverty. Instituto Nacional de Estadistica Guatemala, 2014
[33] IPCC, 2022. Sixth Assessment Report: Impacts, Adaptation and Vulnerability. https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/
[34] Schmalzbauer, A., 2018, Barriers and success factors for effectively co-creating nature-based solutions for urban regeneration. Deliverable 1.1.1, CLEVER Cities, H2020 grant no. 776604.

approach to adaptation should be the centre of urban planning processes, which are informed by climate risk data and ecosystem assessments. For example, this would entail avoiding construction in flood-prone zones and reducing the amount of runoff from upstream developments as well as enhancing water harvesting and storage capacity by i) implementing urban NbS interventions; ii) advocating policies that promote the use of permeable surfaces and rainwater harvesting; and iii) undertaking construction that facilitates infiltration and increases detention storage for flood reduction or enhanced water availability in cases of water scarcity. Such interventions should be integrated into designing new urban developments and retrofitting urban NbS into existing infrastructure when possible. The broader adoption of ecosystem-based urban adaptation strategies requires enhanced institutional and policy frameworks, tailored risk-informed urban planning tools and sustainable financial strategy to guide the selection of the most suitable and cost-effective adaptation interventions. This approach works at a system level, enhances connectivity and acts at multiple scales, each of which is central to progressing NbS in an urban context.

Project / Programme Objectives:

15. The project's objective is to address the interlinked challenges of climate change and urbanization by implementing and upscaling NbS to reduce urban climate risks, enhance climate resilience of the communities, provide sustainable and inclusive livelihood opportunities, and build institutional capacity. The project will incorporate new approaches to transform urban development traditional models into climate risk and ecosystem sensitive approaches and interventions using nature-based solutions (NbS). This objective will be achieved via:
    - **Increasing the capacities of municipal governments and relevant local actors** to plan and manage urban climate risks and vulnerabilities by the design and adoption of NbS (*Component 1*).
    - **Increasing the resilience of citizens, critical urban infrastructure and basic services** by improving awareness, ownership and capacities to respond to climate change, including to operate, maintain and replicate urban NbS (*Component 2*).
    - **Designing sustainable financial plans** to scale up the implementation of Nature-based urban planning (*Component 3*).
    - **Improving local, national and regional ownership and knowledge to increase urban climate resilience in the region** by establishing an academy for ecosystem-based urban adaptation planning to foster South-South learning and collaboration (*Component 4*).
16. The project's objective is in alignment with the Adaptation Fund Results Framework, in particular Outcome 2 (Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses), Outcome 3 (Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level) and Outcome 4 (Increased adaptive capacity within relevant development and natural resource sectors).

Project / Programme Components and Financing

Project Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1. Enhancing local and national technical capacities and policy framework for effective ecosystem-based urban adaptation planning	Strengthened local institutional capacity and improved climate information to reduce climate risks and losses in cities	1.1 Urban climate services and decision-support tools are developed and tested to guide urban planning processes and regulatory framework 1.2 Guidelines and metrics for assessment of urban "loss and damage" developed and validated 1.3 Local and provincial officials, local communities and other relevant stakeholders, have the skills to analyze and integrate climate risk factors in urban planning instruments and strategies. 1.4 National "Urban NbS for Resilience" Dialogues organized, and coordination and collaboration of diverse actors facilitated	El Salvador, Guatemala, Honduras	1,200,000 US$
2. Implementing NbS interventions to build climate resilience of citizens,	Increased adaptive capacity of cities and ecosystems via implementation of	2.1 Ecosystem-based urban adaptation strategies are co-designed for nine cities with gender responsive and socially inclusive approaches	El Salvador, Guatemala, Honduras	7,760,000 US$

critical urban infrastructure and basic services	ecosystem-based urban adaptation plans and NbS interventions	2.2 Local and national government officials, citizens, NGOs, academia, and private sector actors with enhanced capacities to design, implement and maintain NbS interventions. 2.3 NbS for adaptation are co-designed and implemented at different scales to address identified climate risks and reduce impacts in nine cities		
3. Designing and adopting urban adaptation financing plans	Municipalities have integrated climate risk in budget planification and increased their readiness to access adaptation financing and invest in climate resilient urban development	3.1 Guidelines and assessment of the adaptation finance gap in cities conducted and disseminated 3.2 Enhanced institutional capacities (public and private) in climate adaptation financing 3.3 Plans for innovative financing of the sustainability and upscaling of ecosystem-based urban adaptation strategies designed and adopted	El Salvador, Guatemala, Honduras	850,000 US$
4. Advancing regional learning and knowledge management on urban NbS	Strengthened awareness and ownership on ecosystem-based urban adaptation at local and regional level.	4.1 Academy on ecosystem-based urban adaptation planning established with tools and material for trainings 4.2 City-to-city learning program enhances collaboration at local level for climate resilient planning 4.3 Three regional conferences at place to enhance south-south learning and promote project results.	El Salvador, Guatemala, Honduras	1,650,000 US$
6. Project/Programme Execution cost				1,270,000 US$
7. Total Project/Programme Cost				12,700,000 US$
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)				1,270,000 US$
Amount of Financing Requested				14,000,000 US$

Project Duration: *5 years (60 months)*

PART II: PROJECT / PROGRAMME JUSTIFICATION

17. A regional approach is critical for this project in Honduras, Guatemala and El Salvador to address common climate threats, urban development contexts and leverage opportunities for learning and upscaling ecosystem-based urban adaptation nationally and regionally. The regional approach will enable the synergy of action through a coordinated planning and implementation of activities and contribute to a comprehensive approach for achieving the goals of the Regional Plan for Implementation of the New Urban Agenda in Central America and the Dominican Republic[35]. The project is designed in four components:
18. **Component 1. Enhancing local and national technical capacities and policy framework for effective ecosystem-based urban adaptation planning:** Climate change adaptation planning and investment in cities relies on both available and reliable information that describes present and future climate impacts and institutional capacities to interpret and use the information. Presently, such data and models are either not available for intermediate cities in Central America, or if they do exist, they are at coarse spatial resolutions that do not assist with planning interventions. This means that there is no baseline for short and long-term urban adaptation planning, which can be used in the future to gauge performance and/or track change of both green/green-grey/blue infrastructure for climate change adaptation. In parallel, there is a knowledge gap on approaches and metrics for accounting climate-related "loss and damage" at urban scale. This component will enhance the knowledge base via the generation of urban climate information services, which will be integrated in Decision Support Tools to urban adaptation planning. Experts from municipal and provincial authorities will gain the necessary skills to participate in the co-creation of the urban climate information services and decision-support tools. The results of the Component will include validated tools, also suitable for other cities and countries: (1) Urban risk-based and vulnerability assessments; (2) Hydrological impact modelling; (3) Adaptation options analysis; (4) Approach and metrics for estimation of climate-related "loss and damage" in cities. To enhance the coordination and participatory mechanisms for urban adaptation planning, the project will facilitate *National Dialogues on Urban NbS for Resilience* which will aims as well to build a bridge between the urban adaptation agenda and national policy instruments such as Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs).
19. **Component 2. Implementing NbS interventions to build climate resilience of citizens, critical urban infrastructure and basic services:** Ecosystems in cities play a vital role in flood reduction and provide various

[35] SICA/UN-HABITAT, 2021. Plan Regional para la Implementación de la nueva agenda urbana en Centroamérica y República Dominicana. https://eurosocial.eu/wp-content/uploads/2021/06/PRINAU-SICA.pdf

other ecosystem services needed for ensuring water access and reduction of extreme temperature in cities. Interventions under this component will focus on implementing concrete NbS (e.g., reforestation and stabilization of riverbanks, restoration of degraded areas, rainwater harvesting nature-based infrastructure) to address urban risks from flood, landslides, extreme temperature, and water scarcity. Capitalizing on Component 1, a catalogue of cost-effective and gender inclusive NbS at urban and watershed scale will be defined, co-designed and implemented in close collaboration with the citizens and local authorities, to address the key identified climate risks. Table 2 shows an example of the NbS interventions[36] that can be considered for implementation.

Table 2. *Example of NbS interventions reducing specific climate risks. Source: Project CityAdapt 1.0*

Nature-based Solutions (NbS) interventions	Urban climate hazards			
	Floods	Landslides	Water stress	Heat stress
Urban				
Green areas to increase infiltration of rainwater run-off and reduce flood impacts while reducing temperature	●			●
Permeable pavements to increase infiltration of rainwater run-off	●			
Rainwater harvesting to redirect the rainwater and stormwater run-off and storage for productive use	●		●	
Green corridors to reduce rainfall run-off and extreme heat	●			●
Peri-Urban				
Riverbank stabilization with hybrid materials (e.g. gabions) and vegetation	●	●		
Watershed				
Wetland restoration/conservation to reduce flood damage, enable groundwater recharge and impove water availability	●		●	
Reafforestation, afforestation and forest conservation to stabilise slopes and prevent landslides, enhancing water retention	●	●	●	

20. **<u>Component 3. Designing and adopting urban adaptation financing plans:</u>** Most intermediate cities, including the project cities, do not have a comprehensive inventory of their adaptation needs. Planning and implementing adaptation strategies require such information to better understand investment needs. In addition, these cities typically lack the necessary financing. Public budgets are strained and face intense competition for scarce public resources. This component will aim to design an Urban Adaptation Financing Framework for the three countries, which will provide a comprehensive analysis of the adaptation needs in the nine cities and opportunities to mobilize finance via new innovative instruments or tailoring of existing instruments. It will in parallel develop capacities at organizational level (public and private) to enhance access to adaptation finance and the design of innovative risk-informed finance instruments. The strategy will provide a roadmap which will place greater emphasis on the targeted use of public and private finance to enable more transformative change and attract additional investment for the promotion of ecosystem-based urban adaptation planning. Results from this Component will include: (1) Identification of key public and private actors and their capacity for engaging in urban climate finance for adaptation; (2) Analysis of finance gap and needs for urban adaptation**;** (3) Identification of public and private financing sources and instruments for urban NbS[37], including (i) National Budget Allocations (e.g. revenue tools); (ii) Grants (e.g., subsidies, payments for results); (iii) Equity (e.g., concessional and non-concessional); (iv) Debt (e.g., credit line, Debt-Nature swap); (v) Risk mitigation (e.g., bonds, insurance) to close the gap and guarantee the sustainability and scaling of urban NbS**;** (4) Plans for financing the sustainability and upscaling of ecosystem-based urban adaptation strategies.

21. **<u>Component 4. Advancing regional learning and knowledge management on urban NbS</u>**: Regional learning and knowledge generation and management are a cornerstone strategy to sustain efforts over time and foster

[36] The listed EbA/NbS interventions are part of the catalogue of implemented interventions by the project CityAdapt in El Salvador, Mexico and Jamaica: https://cityadapt.com/soluciones-basadas-en-la-naturaleza/

[37] UNEP, 2021. State of Finance for Nature: Tripling Investments in Nature-based Solutions by 2030.

upscaling of ecosystem-based urban adaptation in the three countries and within wider Central America. This component will support the development of innovative knowledge management mechanisms for information sharing, training and exchange of experiences, data collection and analysis, dissemination and capitalization of best practices. The project will collaborate with regional organizations such as the Commission of Central America on Environment and Development (CCAD) part of the System for Integration of Central America[38] (SICA) to ensure that lessons learned are shared and disseminated and trainings take a regional approach. Among the training and knowledge sharing mechanism are: (i) Academy on Ecosystem-based Urban Adaptation Planning, (ii) City-to-City Learning Programme and (iii) Regional workshops for knowledge exchange.

22. **Regional approach supporting cost-effectiveness.** Economic analysis of the benefits of land restoration in Latin American provides evidence to support that the adoption of policy measures and removal of barriers to land restoration efforts by national and local governments result in substantial benefits, including gains in disaster risk control, agricultural production, alleviation of food insecurity and carbon sequestration[39]. The regional approach as well allows for the demonstration of wider range of urban NbS technologies, products, and services, thus allowing cross country innovation, exchange and sharing of experiences and lessons. Many of the adaptation products and services coming from this project will be suitable for other cities and countries in the region with high potential for scale-up and replication. The project cost at the regional level compared to individual projects in each country will be lower, including administrative and implementation costs. This also helps to reduce costs and avoid duplication of efforts thereby enhancing the cost- effectiveness of the project.

23. **Learning and knowledge:** At the regional / international level, learning/knowledge will be managed and promoted through the existing Latin America and the Caribbean Regional Knowledge Hub on urban NbS – CityAdapt[40]. The selected cities will join the Community of Practice (CoP) established by the Nature4Cities project and will form urban NbS task groups on selected topics with policymakers, practitioners and researchers to increase the understanding and knowledge sharing on gender-sensitive climate adaptation mainstreaming within municipal planning. At national level, learning / knowledge will be managed and promoted by UNEP in coordination with universities and execution entities, by the generation of tailored knowledge products such as catalogues and manuals. At the local level, project beneficiaries will be involved through a participatory vulnerability assessment, planning processes and capacity and skills building to plan, implement, maintain and replicate the proposed concrete adaptation techniques being co-designed and implemented. Additionally, the City-to-City Learning Programme (Component 4) will ensure exchange of lessons learned and best practices within cities.

24. **Complementarity with other initiatives:** The project is built upon the lessons learned and best practices from two regional projects implemented by UNEP including: (1) ***CityAdapt - Building Climate Resilience of Urban Systems through Ecosystem-based Adaptation (EbA) in Latin America and the Caribbean***[41] (financed by GEF: 2018 - 2023) implemented in El Salvador, Mexico and Jamaica and (2) ***Nature4Cities - Increasing resilience through Nature based Solutions in Latin American cities***[42] (financed by GCF Readiness: 2021 - 2024) implemented in Honduras, Guatemala, Cuba, Ecuador, Panama, the Dominican Republic and Uruguay. Both projects aimed to enhance enabling environment for the transition towards ecosystem-based urban adaptation planning in the project countries (Honduras, El Salvador and Guatemala) and have demonstration pilots of NbS interventions (El Salvador). Lessons from those two projects will be replicated and upscaled by the current regional project in the selected cities. Key lessons learned both from CityAdapt Nature4Cities integrated in this project inlcude: (1) addressing the knowledge gap and capacity needs of local authorities to understand loss and damage from climate extremes and adaptation needs of the cities will be addressed in *Components 1 and 3*; (2) access innovative financing for the sustainability and upscaling the urban NbS for adaptation, which is the focus of *Component 3* of this regional project; (3) enhancing the participatory and gender-responsive approach to planning and implementation of urban adaptation strategies, which is the focus of *Components 1 and 2* of this regional project. Additionally, the project will seek complemenatiry with i) development of the National Adaptation Plans, framed under the Readiness programme of the Green Climate Fund led by UNEP, currently under implementation in Honduras and in approval phase in El Salvador, ii) regional rural NbS projects, such as the GCF funded programme “Ecosystem-based Adaptation to increase climate resilience in the Central American Dry Corridor and the Arid Zones of the Dominican Republic” (FP174) and the Adaptation Fund project “Use of Nature-

[38] Sistema de la Integración Centroamericana (SICA): https://www.sica.int
[39] World Resources Institute. 2018. The Economic Case for Landscape Restoration in Latin America. Available at: https://wriorg.s3.amazonaws.com/s3fs-public/The_Economic_Case_for_Landscape_Restoration_in_Latin_America.pdf?_ga=2.223405598.480839473.1559569688-232533270.1535385279
[40] Latin America and the Caribbean Regional Knowledge Hub on urban NbS – CityAdapt: https://cityadapt.com
[41] Additional information: https://www.thegef.org/projects-operations/projects/5681
[42] Additional information: https://www.greenclimate.fund/document/increasing-resilience-through-nature-based-solutions-latin-american-cities-nature4cities

based Solutions to Increase Resilience to Extreme Climate Events in the Atlantic Region of Central America". Building upon these initiatives, the project will use existing climate change dialogue tables formed in each country for consultation purposes, observe participatory processes to ensure ownership of adaptation approaches, establish sinergies with research programme for long-term monitoring of the NbS interventions, select NbS measures at the urban watershed level based on climate information, territorial diagnoses and planning instruments at different levels.

25. **Consultative process:** The development of the pre-concept was in close collaboration with national entities, in particular the technical teams of the Ministries of Environment in each of the three countries. The project idea has also been discussed with most of the selected cities and inputs from the consultatin process have been integrated in the project design. At concept note formulation stage, local and national stakeholder consultations and meetings will be conducted for the three countries throughout project formulation. These will strengthen dialogue with the stakeholders and focus on better understanding the specific cities' needs, shared visions of the local communities, municipal planning authorities, national institutions and other relevant actors. Those held with local actors will aim to better comprehend the relation between urban communities' livelihoods, ecosystems and perceived climate risks; while those held with policy makers will aim to further understand capacity and information needs, as well as potential for policies' alignment[48]. Concept development will include an initial review of environmental and social impacts, which will be further developed during full proposal formulation into an Environmental and Social Management Framework, as well as a Gender Plan, in line with the Environmental and Social policy of the Adaptation Fund, respecting Free, Prior, and Informed Consent (FPIC) at all levels.

26. **Sustainability.** The project design will include the development and regular updating of a Sustainability Plan (focusing on social, economic, technical and environmental domains) starting at project inception, in order to ensure: i) that the pathways to scale built into the project are fully utilized, through undertaking cost benefit analysis, knowledge exchanges and dialogue events, and the development and dissemination of protocols, guidelines and tools; ii) that full provision is made by the relevant municipal and provincial government agencies for continued support extending beyond the project implementation period. Through Components 1 and 2, adaptation strategies (i.e. transformative pathways) are designed and implemented via NbS interventions. Through partnerships with government (provincial and local), these will be linked to longer-term transformative outcomes in the future as part of national climate change strategies. This will be supported through Component 3, where financial mechanisms will enhance the long-term sustainability of the NbS interventions. A major aspect of the sustainability strategy will be centred on active community participation and ownership, which will underpin implementation of Components 1 and 2, and be strengthened by capacity development activities. Together, this will ensure a gradual phasing of responsibilities from the project to relevant provincial actors, and communities. This would also ensure that the transformation endures beyond the project implementation cycle.

PART III: IMPLEMENTATION ARRANGEMENTS

27. The project will be implemented by UNEP. UNEP will carry out fiduciary and safeguards oversight and provide the necessary scientific expertise and technical support to the project formulation, start up, implementation, evaluations, and closure. UNEP will implement the project at the regional level from UNEP's Office for Latin America and the Caribbean.
28. At the country level, local organizations will be considered for the local execution of the project, including NGOs, associations, and community groups. The identification and selection of partners will be defined in the concept note phase. UNEP will sign a Project Cooperation Agreement with the Implementing Entities to establish clear roles and responsibilities for the execution of the above-mentioned project activities; and to ensure that the activities are executed in line with AF and UNEP rules, policies, and requirements.

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[43]

Miguel Alberto Gallardo Meléndez *General Director of Ecosystems and Biodiversity* National Designated Authority to the Adaptation Fund Ministry of Environment and Natural Resources (MARN) El Salvador	Date*:* July 26th 2022
Lucky Halach Medina Estrada Secretary of Energy, Natural Resources, Environment and Mines Honduras	Date*:* August 1st 2022
Mario Roberto Rojas Espino *Minister of Environment and Natural Resources* *Guatemala*	Date*:* August 8th 2022

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
María Elena Zúñiga Barrientos Implementing Entity Regional Development Coordinator	
Date: January 9th 2023	Tel. and email: maria.zuniga@un.org
Project Contact Person: Marta Moneo Lain	
Tel. And Email: +507 6038 8570 marta.moneo@un.org	

[43] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Oficio No.-DMA-0343-2022

Tegucigalpa, M.D.C., August 1st, 2022
Ref.: Endorsement for "Building resilience of urban communities in Northern Central America through Nature-base Solutions (NbS)"

ADAPTATION FUND BOARD
Adaptation Fund Board Secretariat

Dear Sir/Madam

I am pleased to confirm the commitment of the State Secretariat of Energy, Natural Resources, Environment and Mines of Honduras to endorse the "Building Resilience of Urban Communities in Northern Central America through Nature-base Solutions.

In my capacity as Official Designated National Authority for the Adaptation Fund in Honduras, I confirm that the above-mentioned regional project proposal is in accordance with the government's priorities in implementing adaptation activities to reduce adverse impacts and risks posed by climate change in the region.

If approved, the project will be implemented by the United Nations Environment Programme (UNEP) and executed by the State Secretariat of Energy, Natural Resources, Environment and Mines of Honduras.

Kind regards,

SECRETARIO DE ESTADO
HONDURAS
Energía, Recursos Naturales, Ambiente y Minas

LUCKY HALACH MEDINA ESTRADA
Secretary of Energy, Natural Resources,
Environment and Mines
Honduras

Cc: Archivo

MINISTERIO DE AMBIENTE Y RECURSOS NATURALES
GUATEMALA, C.A.

Ministro

Oficio MI-1339-2022/MRRE-gpvg
August 8, 2022

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for "Building resilience of urban communities in Central America by leveraging Nature-based Solutions (NbS) for adaptation in El Salvador, Honduras and Guatemala"

In my capacity as designated authority for the Adaptation Fund in Guatemala, I confirm that the above regional project proposal is in accordance with the government's priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in urban areas in the country and the region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN Environment Programme.

Sincerely,

MINISTERIO DE AMBIENTE Y RECURSOS NATURALES
MINISTRO

Mr. Mario Roberto Rojas Espino
Minister of Environment and Natural Resources

7 Avenida 03-67 Zona 13 - PBX: 2423-0500
http://www.marn.gob.gt

GOBIERNO DE EL SALVADOR

MINISTERIO DE MEDIO AMBIENTE Y RECURSOS NATURALES

MARN-DCC-UCC-043-2022

San Salvador, July 26th, 2022

Subject: Endorsement to regional project "Building resilience of urban communities in Central America by leveraging Naturebased Solutions (NbS) for adaptation."

Mister
Mikko Ollikainen
Head of the Secretariat
Adaptation Fund Board
Washington DC.

Dear mister Ollikainen:

In my capacity as designated authority for the Adaptation Fund in El Salvador, I confirm that the regional project proposal "Building resilience of urban communities in Central America by leveraging Nature-based Solutions (NbS) for adaptation", agrees with the government's priorities in implementing adaptation activities to reduce the adverse effects and risks posed by climate change, in El Salvador

I am therefore pleased to support the project proposal with the support of the Adaptation Fund.
If approved, the project will be implemented by the United Nations Environment Programme (UNEP).

The undersigned is the duly authorized representative of the National Designated Authority of El Salvador.

Yours sincerely

MINISTERIO DE MEDIO AMBIENTE Y RECURSOS NATURALES - EL SALVADOR, C.A. DIRECCIÓN DE ECOSISTEMAS Y BIODIVERSIDAD

Miguel Alberto Gallardo Meléndez
General Director of Ecosystems and Biodiversity
Ministry of Environment and Natural Resources (MARN)
National Designated Authority to the Adaptation Fund

Project Formulation Grant (PFG)

Submission Date: January 9th 2023

Adaptation Fund Project ID:
Country/ies: Honduras, Guatemala, El Salvador
Title of Project/Programme: Building resilience of urban communities in Central America by leveraging Nature-based Solutions (NbS) for adaptation
Type of Implementing Entity: Multilateral Implementing Entity
Implementing Entity: United Nations Environment Programme (UNEP)
Executing Entities:

- Ministry of Environment and Natural Resources, El Salvador
- Ministry of Environment and Natural Resources, Guatemala
- Secretariat of Natural Resources and Environment, Honduras

A. Project Preparation Timeframe

Start date of PFG	**1 February 2023**
Completion date of PFG	**1 August 2023**

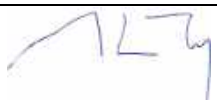
B. Proposed Project Preparation Activities ($)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Conduct baseline assessment, climate vulnerability and risks analysis and gender-sensitive needs assessments in the selected cities in El Salvador, Guatemala, and Honduras. This activity will be performed by national experts and supported by the technical teams from the projects Nature4Cities and CityAdapt.	Comprehensive assessments to confirm the selection of the cities and their climate vulnerability and risk profile, which inform the project design, the intervention strategy, and activities.	7,500
Maintain structured dialogues and consultations with stakeholders at national, provincial, and urban level for concept formulation, review and feedback. The stakeholder consultation will be led by the national experts and supported by an international expert.	Stakeholder consultation report including feedback and validation of the project design by the relevant stakeholders at a national, provincial, and urban level.	4,500
Preparation of the concept note based on the conducted assessments and stakeholder consultations. This activity will be performed by an international expert.	Concept note and annexes prepared	8,000
Total Project Formulation Grant		**20,000**

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
María Elena Zúñiga Barrientos Implementing Entity Regional Dev. Coordinator, UNEP		January 9th, 2023	Marta Moneo Lain	+507 6038 8570	marta.moneo@un.org