ADAPTATION FUND

AFB/PPRC.37/Inf52
7-8 April 2026

Adaptation Fund Board
Project and Programme Review Committee
Thirty-seventh Meeting
Bonn, Germany

PROPOSAL FOR LARGE INNOVATION PROJECT FOR CUBA

Funding Proposal Template

Application Template for Fully-Developed Proposal and Project Concept Proposal[1]

PROGRAMME ON INNOVATION:
LARGE GRANTS PROJECTS

REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project must be fully prepared when the request is submitted.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN N7-700
Washington, D.C., 20433
U.S.A
Fax: +1 (202) 522-3240/5
Email: afbsec@adaptation-fund.org

[1] Single Country and Regional Concept proposals should complete Part I and Part II of the Project Proposal Template.

ADAPTATION FUND

SINGLE COUNTRY/ REGIONAL INNOVATION PROJECT/PROGRAMME PROPOSAL

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Innovative blue-carbon finance for coastal and aquaculture resilience in Cuba
Country/ Countries:	
Thematic Focal Area[2]:	Innovative climate finance and Nature-based solutions and ecosystem-based adaptation
Type of Implementing Entity:	Multilateral Implementing Entity (MIE)
Implementing Entity:	United Nations Industrial Development Organization
Executing Entities:	Ministry of Science, Technology and Environment (CITMA) and UNIDO.
Amount of Financing Requested:	US$ 4,954,000 (large innovation grant)

Project / Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve, including both the regional and the country perspective. Outline the economic social, development and environmental context in which the project would operate in those countries.
Describe the problem the proposed project/programme is aiming to solve. Write this as a concise problem statement: The current situation, the desired future, and the gap between the two. Provide brief further information on the current situation including both the regional and the country perspective. Outline the economic social, development and environmental context in which the project would operate in those countries. Describe the climate change vulnerabilities impacting the country/region as well clearly explain the problem area that would be the focus of the innovation.

[2] Thematic areas are: Agriculture, Coastal Zone Management, Disaster risk reduction, Food security, Forests, Human health, Innovative climate finance , Marine and Fisheries, Nature-based solutions and ecosystem based adaptation, Protection and enhancement of cultural heritage, Social innovation, Rural development, Urban adaptation, Water management, Wildfire Management.

Location and Climate

Cuba is a Small Island Developing State (SIDS) located in the Caribbean, with over 5,700 km of coastline and home to approximately 11.2 million inhabitants. Due to its island geography, a significant portion of the urban population (estimated at 70–75%) resides within 50 kilometers of the coastline. The island is characterized by a central mountain system which intersects with extensive plains and coastal lowlands. Its topography, combined with the influence of the Gulf Stream and trade winds, plays a crucial role in determining the island's climatic and ecological patterns. As a result, Cuba exhibits a tropical climate marked by distinct wet and dry seasons, significant rainfall variation between its mountainous and lowland areas, and notable ecological transitions from coastal mangroves to upland forests (INSMET, 2001; WB, 2020).

Cuba has experienced a significant warming trend, with a national average temperature rise of approximately 0.9°C since the mid-20th century. This warming intensifies evaporation rates and is directly linked to increased aridity, particularly affecting agricultural sectors and freshwater availability. projections indicate an additional +1.5–2.5°C by 2050 under intermediate scenarios[3]. Rainfall patterns are shifting, with longer dry spells and delayed rains leading to frequent droughts.

In late 2024, Cuba endured an unprecedented series of natural disasters within just 20 days, severely amplifying existing vulnerabilities. Hurricane Oscar (Category 1), striking on October 20, 2024, amidst an ongoing nationwide blackout, caused widespread flooding and landslides, damaging over 2,282 homes and leading to eight fatalities[4]. Shortly after, on November 6, 2024, Hurricane Rafael intensified to Category 3 strength, devastating western Cuba, displacing over 220,000 people and resulting in economic losses exceeding US$1.35 billion[5]. Only four days later, twin earthquakes of magnitudes 6.0 and 6.8 struck eastern Cuba's Granma and Santiago de Cuba regions, causing significant structural damage, triggering approximately 5,000 aftershocks, and further exacerbating infrastructural fragility and economic disruption[6].

Regional Climate Vulnerability (Holguín and Las Tunas provinces)

Cuba's low-lying eastern provinces of Holguín and Las Tunas are on the front line of climate change. These areas face accelerating sea-level rise, coastal erosion, and saltwater intrusion that threaten coastal settlements and livelihoods. National projections warn that without adaptation, by 2100 up to 21 coastal communities could be lost and nearly 100 severely affected by chronic flooding and salinization. The government's

[3] https://www.adaptation-undp.org/projects/coastal-resilience-climate-change-cuba-through-ecosystem-based-adaptation-mi-costa

[4] Le Monde, 2024 https://www.lemonde.fr/en/international/article/2024/10/21/hurricane-oscar-makes-landfall-in-cuba-during-ongoing-huge-power-outage_6729964_4.html

[5] Reuters, 2025 https://www.reuters.com/world/americas/cuba-left-without-electricity-after-hit-hurricane-rafael-2024-11-07/

[6] El País, 2024 https://elpais.com/america/2024-11-10/sismos-de-hasta-68-de-magnitud-dejan-danos-en-el-oriente-de-cuba.html

climate plan (*Tarea Vida*) identifies Holguín and Las Tunas as priority regions due to their arid conditions and vulnerable coasts. Intensifying hurricanes and droughts have already devastated infrastructure, fisheries and aquaculture in these coastal communities.

- **Drought and Water Scarcity:** Las Tunas is known as one of Cuba's driest provinces, with chronically low rainfall. It lies in the island's rain shadow and has suffered recurrent drought emergencies. Over 2014–2017, eastern Cuba experienced its worst drought in 115 years[7] Las Tunas was among the hardest hit, with reservoirs drying up – a local study noted a 34% drop in reservoir capacity over the 2010s due to prolonged droughts and evaporation (INRH 2021). Groundwater is over-extracted, and wells near the coast are increasingly brackish from saltwater intrusion. This water stress undermines agriculture and aquaculture and drives periodic water rationing for communities.

- **Extreme Storms:** Holguín province, bordering the Atlantic, is often in the path of Cape Verde hurricanes. Hurricane Ike's catastrophic impact on Holguín (noted above) illustrates the province's exposure]. Communities in low-lying coastal townships (e.g. Antilla, Banes) were completely flooded by Ike's storm surge. In recent years, heavy rains from tropical storms have repeatedly inundated Holguín's river valleys, damaging homes and roads. Las Tunas, though a bit further south, was heavily affected by the outer bands of Hurricane Irma (2017) which caused major flooding in its northern municipality of Puerto Padre. Thousands of homes were damaged and power lines destroyed. With climate change, stronger cyclones are expected to track further east into the Caribbean, putting these provinces at continued risk.

- **Coastal Flooding and Erosion:** The Gulf of Guacanayabo (which Las Tunas borders on its south coast) is a large bay ringed by mangrove swamps and lowland villages. It has seen severe coastal flooding in past hurricanes – entire villages (e.g. Guayabal in Las Tunas) have been periodically evacuated due to storm surge. As seas rise, even normal high tides are creeping further inland, causing "sunny day" tidal flooding in mangrove areas. Shoreline retreat is evident: local measurements in Holguín's north coast (Atlantic side) show beach erosion rates of 1–2 meters per year in unprotected sections[8]. In Las Tunas' south coast, mangrove die-back from higher salinity is exposing more shoreline to wave action, accelerating erosion. Saltwater intrusion is contaminating coastal freshwater lenses and rice fields, posing a grave long-term threat to agriculture in coastal Las Tunas.

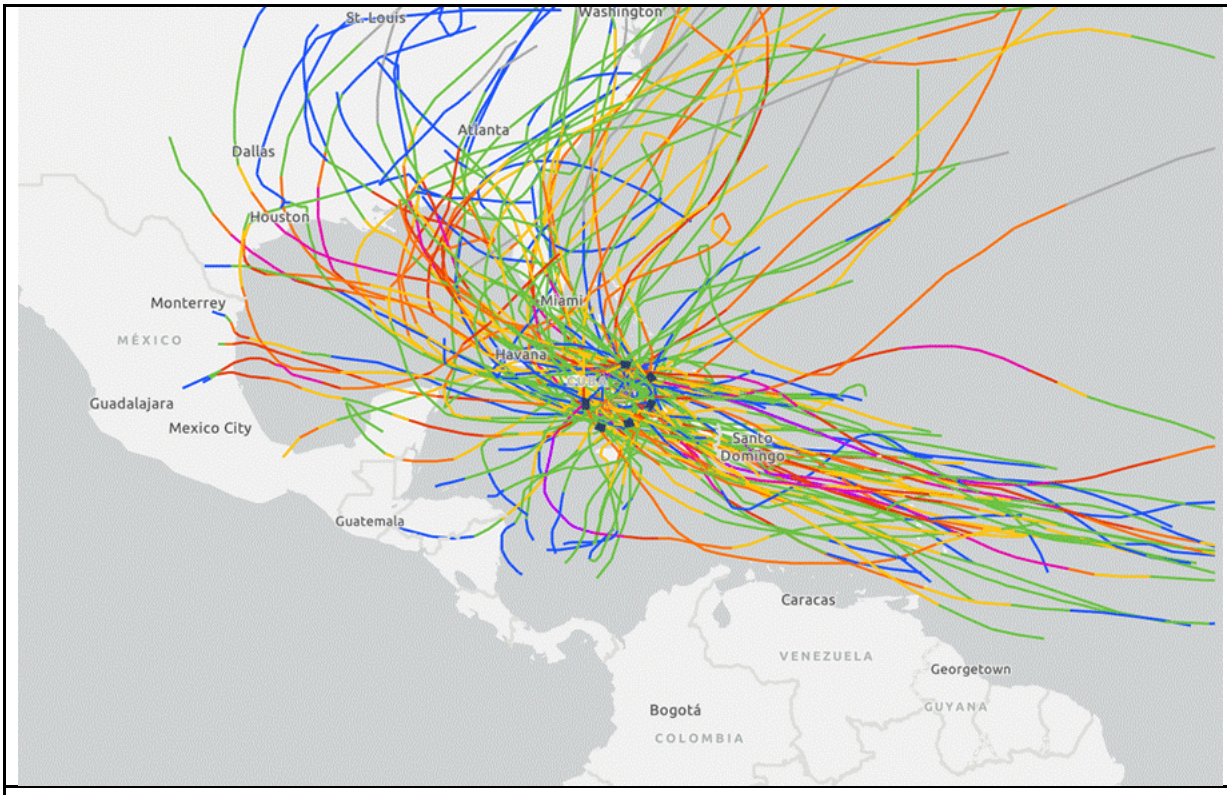
- **Temperature Rise:** Both provinces have seen rising heat. Summer days above 35°C are becoming more common (projected to increase by ~20 extra hot days per year by 2050 under RCP4.5). High heat and evapotranspiration worsen drought impacts on crops and also warm up shallow coastal waters and fish ponds

[7] https://www.wfpusa.org/place/cuba/

[8] https://www.adaptation-undp.org/projects/coastal-resilience-climate-change-cuba-through-ecosystem-based-adaptation-mi-costa

(with consequences discussed below). Eastern Cuba's daytime temperatures regularly exceed western Cuba's, adding to stress on people, livestock and aquatic farms.

Climate projections for Cuba's eastern region are alarming. The Cuban Institute of Meteorology (INSMET), in line with IPCC scenarios, projects that by 2050 the country's mean annual temperature will rise about 1.6 °C (above baseline), with significantly more extremely hot days and evaporation stress. Sea-level rise is expected to reach ~0.3 meters by 2050, and continue to about 0.95 m by 2100, under mid-to-high emission scenarios[9]. Such a rise, combined with stronger storm surges, could inundate vast areas – modeling shows that by 2050, a Category 5 hurricane on top of higher seas could flood up to 19,900 km² of Cuban territory. Even without extreme storms, permanent coastal inundation threatens at least 119 settlements across the island.



Hurricane tracks crossed over Holguin and Las Tunas between 1910 and 2024. Source: https://oceanservice.noaa.gov/news/historical-hurricanes/

Rainfall patterns are expected to shift, with overall precipitation declining up to 20% by 2070 in eastern Cuba and droughts becoming more frequent. Severe droughts have

[9] https://www.adaptation-undp.org/projects/coastal-resilience-climate-change-cuba-through-ecosystem-based-adaptation-mi-costa

already been increasing in the east over recent decades. These projections mean that provinces like Las Tunas (already arid) face intensifying water scarcity and land degradation, while provinces like Holguín face dual threats of drought and coastal inundation. Cuba's climate is inexorably moving toward a hotter, drier regime in the east – a trend that endangers its agricultural base, water supplies, and coastal communities. Without intervention, these provinces face escalating damages – from disappearing coastlines to collapsing rural livelihoods, and potentially an excessive migration

Figure 1 Map of Cuba provinces

Climate Change Impacts on Aquaculture and Coastal Livelihoods

Coastal communities in Holguín/Las Tunas rely heavily on fisheries and aquaculture (e.g. shrimp farms, fishponds, oyster culture) for food and income. Climate change is already disrupting these sectors. The IPCC AR6 reports that warming, ocean acidification and extreme events are negatively affecting fisheries and aquaculture, hindering food production[10]. Locally, higher temperatures reduce oxygen in ponds and raise disease risks; droughts and SLR cause salinization of freshwater sources; and hurricanes/floods regularly damage or wash out fishponds, hatcheries and gear. Decades of mangrove loss and coral reef decline have further removed natural buffers, leaving coastal farms exposed to storm surge and erosion. As a result, yields are falling and losses are mounting – exacerbating food insecurity in communities with few alternatives. Global analyses warn that fishing and aquaculture communities are at the forefront of climate change impacts, especially in low-income regions. Without intervention, these provinces face a downward spiral of declining coastal productivity and livelihood collapse.

[10] https://www.ipcc.ch/report/ar6/wg2/downloads/outreach/IPCC_AR6_WGII_FactSheet_FoodAndWater.pdf

Socio-Economic Pressures on Coastal and Aquaculture Communities

The coastal communities of Holguín and Las Tunas are not only environmentally exposed – they also face compounding socio-economic pressures. These provinces host many small fishing villages, subsistence farms, and emerging aquaculture cooperatives that form the backbone of local food security. Poverty and limited economic diversification heighten vulnerability: incomes in rural coastal Cuba are largely dependent on natural resources (fish, shellfish, salt production, small-scale tourism) that are climate sensitive. For instance, fishermen in Holguín's Bahia de Naranjo or Las Tunas' southern coves already report declining catches as mangroves degrade and reef fish stocks shift or shrink[11]. Many families have few alternatives beyond coastal livelihoods, meaning any climate-driven loss of fisheries or arable land directly impacts nutrition and income.

Aquaculture (fish farming and mariculture) is a strategic sector to support food supply, but it remains fragile. Grow-out ponds and coastal fish pens in these provinces are often in low-lying areas without robust flood protection. Farmers raising shrimp, tilapia or clarias catfish have suffered when extreme events occur – a storm surge can inundate ponds with debris or disease, while droughts concentrate salinity and cause fish kills. Without adaptation, such events can wipe out harvests and discourage further aquaculture investment. Recent socio-economic studies note that 210 million people globally live within 10 km of mangroves and rely on them for fisheries[12] – and in Cuba's coastal hamlets this connection is very direct. A recent Lancet study found that households near healthy mangroves consume 28% more fish than those further away[13], underscoring the link between ecosystem health and local food security. Thus, when mangroves or seagrasses decline (due to development or storms), the livelihoods and diets of these communities suffer immediately.

Socio-economic vulnerability is further compounded by limited infrastructure and services. Many coastal settlements in Holguín and Las Tunas have basic housing and road access; evacuation routes are few, and sea defenses (e.g. seawalls) are minimal outside of larger towns. Water supply can be precarious – drought and saltwater intrusion force communities to rely on trucked water or shallow wells, adding financial strain. The government does provide insurance for agriculture and aquaculture, but payouts (e.g. ~40 million Cuban pesos were paid for climate-related losses in Holguín's insured farms in recent years)[14] do not fully offset the long-term declines in productivity. Out-migration of youth from these areas is increasing as opportunities shrink. Women, who are often active in community co-operatives and household farming, face disproportionate burdens when resources dwindle or disasters strike. These socio-economic stresses mean that coastal communities have low adaptive capacity on their own – they have fewer savings to rebuild after a storm, less access to new technologies, and limited financial services tailored to climate risk.

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[11] https://www.greenclimate.fund/story/cubas-coastal-communities-fight-climate-change
[12] https://www.wetlands.org/210-million-people-benefit-from-mangroves-associated-fisheries/
[13] https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(23)00196-1/fulltext
[14] https://www.ahora.cu/en/holguin/7066-holguin-shows-results-in-confronting-climate-change

National Policy Context, Tarea Vida, and Cuba's Climate Commitments

Cuba has recognized these challenges at the highest levels and has responded with a robust national adaptation strategy. The National Environmental Strategy (ENA) for the cycle 2021-2025[15] establishes a focus on ecosystem restoration, climate resilience, and environmental quality, while the State Plan for Confronting Climate Change, "Life Task" ("Tarea Vida")[16], envisions implementing a program of progressive investments in the medium (2030), long (2050), and very long term (2100) in prioritized coastal zones, according to their vulnerability.

Tarea Vida identifies 15 priority vulnerable zones (many along the southern and northeastern coasts) and outlines phased actions through 2030, 2050, and 2100. Protecting coastal communities is at the center of this plan. Key Tarea Vida goals include: (1) Adaptation projects in the most at-risk areas (e.g. mangrove rehabilitation, seawater desalination, flood-resilient housing), (2) full rehabilitation of beaches across the archipelago, (3) ensuring water availability to combat drought, (4) directing reforestation to protect soils and coastal buffers, and (5) restoring coral reefs and mangroves that have been degraded. Notably, the plan mandates no new homes in zones predicted to be flooded and a gradual relocation or density reduction in existing low-lying settlements. It also emphasizes leveraging nature-based measures like dune restoration and mangrove planting as first lines of defense.

As declared in its Nationally Determined Contribution (NDC 3.0)[17] and its first Biennial Transparency Report (BTR1)[18] Cuba's climate commitments prioritize adaptation, mainly due to the negative impact of climate change on its natural and human ecosystems. NDC's highlights the country's high exposure climate change effects as a small island developing state and explicitly references Tarea Vida as general roadmap to implement adaptation measures[19]. Cuba's NDC and national climate plans set targets such as increasing forest cover to 33% by 2030 and rehabilitating coastal ecosystems as protective buffers. Furthermore, the government has recognized the critical role of healthy marine ecosystems – acknowledging that conserving mangroves, seagrasses, and reefs is essential for protecting communities, supporting fisheries among other key ecosystem services. Even though CO_2 removal capacity of these so called "Blue Carbon ecosystems"[20] is not accounted in the NDC, they are recognized as an important requirement and a priority for defining Blue Carbon sequestration potentials contributing to national climate goals.

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[15] https://www.tareavidacuba.cu/sites/default/files/Estrategia%20Ambiental%20Nacional%202021-2025.pdf

[16] https://climate-laws.org/document/tarea-vida-plan-to-face-climate-change_c9a2

[17] https://unfccc.int/sites/default/files/2025-02/REPUBLICA%20DE%20CUBA%20CND3.0.pdf

[18] https://unfccc.int/documents/645184

[19] https://unfccc.int/sites/default/files/NDC/2022-06/Cuban%20First%20NDC%20Summary%20%28Updated%20submission%29.pdf

[20] https://esajournals.onlinelibrary.wiley.com/doi/10.1890/110004

The NDC 3.0 also notes the barriers Cuba faces, including the long-standing economic blockade that restricts access to finance and technology for climate action. It recognizes the need for financial resources, technology and capacity building, derived from international cooperation, and from compliance with the obligations of industrialized countries under the United Nations Framework Convention on Climate Change. These external constraints makes innovative financing solutions all the more important for Cuba to meet its climate goals.

Streamlining Adaptation into Local Planning

Cuba has started integrating climate considerations into sectoral and local development plans. For example, the National Coastal Zone Plan now incorporates sea-level rise projections, and the water resource management plan addresses drought resilience in farming. Holguín and Las Tunas have provincial Tarea Vida action plan – Holguín's includes beach nourishment at Guardalavaca and new freshwater reservoirs to push back saline intrusion, while Las Tunas is focusing on resilient agriculture in its southern municipalities (e.g. salt-tolerant crop varieties and efficient irrigation on 600+ ha). National institutions like CITMA (Ministry of Science, Technology and Environment) have decentralized delegations to coordinate these efforts on the ground.

Cuba's policy framework thus provides a strong framework for locally-led adaptation with an emphasis on *nature-based solutions*. Tarea Vida's long-term vision aligns with global best practices: avoid maladaptive development in hazard zones, restore ecosystems for protection, educate communities, and mainstream climate risk into all planning. However, achieving these ambitions requires financing and technical innovation beyond traditional grant funding. Cuba's updated NDC explicitly calls for mobilizing climate finance and technology transfer to implement adaptation actions, highlighting the need for international support and creative mechanisms to overcome funding gaps. The proposed project responds directly to this context – operationalizing national policy goals by developing an innovative blue carbon finance mechanism to fund local adaptation in coastal ecosystems and aquaculture communities.

Blue Carbon Ecosystem Services for Coastal and Aquaculture Adaptation

Blue carbon ecosystems – mangrove forests, seagrass meadows, and coastal wetlands – have historically provided natural defenses in Cuba's coastal zones. They buffer storm waves, reduce erosion, trap sediments, and filter salt and pollutants, thereby protecting shorelines and maintaining water quality[21]. Mangroves and seagrasses also serve as vital nursery habitats for fish and shellfish, sustaining the fisheries and aquaculture in Cuba, mangroves contribute to mariculture (coastal aquaculture) by providing habitat and water purification, and they support other livelihoods like beekeeping, traditional medicinal products and fishing for subsistence[22]. Healthy mangroves and seagrasses are thus

[21] https://www.epa.gov/sciencematters/epa-science-matters-newsletter-how-deep-are-seagrasses
[22] lhttps://www.mdpi.com/2073-4441/14/23/3903

directly linked to resilient aquaculture: they improve water quality (absorbing excess nutrients and trapping sediments), stabilize the coastline around fishponds, and enhance fisheries recruitment. Crucially, these ecosystems also form physical storm barriers. It is estimated that Cuban mangroves currently protect ~22,476 people and avert >USD 150 million in damage annually by reducing flooding and storm impacts[23]. Restoring and conserving blue carbon ecosystems yields multiple adaptation benefits – coastal protection, erosion control, water quality improvement, and biodiversity support – which bolster the climate resilience of coastal communities and their aquaculture-based livelihoods.

Coastal "blue carbon" ecosystems – mangrove forests**,** seagrass meadows, and salt marshes – provide a suite of ecosystem services that directly benefit coastal communities and sectors like aquaculture. Restoring and conserving these ecosystems yields multiple adaptation benefits:

- **Coastal Protection and Erosion Control:** Mangroves form natural protective buffer zones along shorelines. Their dense root networks dissipate wave energy and storm surges, reducing the impact of hurricanes on coastal infrastructure (including fishponds, dikes and hatcheries)[24].This protective service is critical in Holguín and Las Tunas where storms and high winds periodically damage aquaculture facilities. Healthy mangroves also trap sediments, stabilizing shorelines and preventing erosion of pond embankments. By buffering wave action, these ecosystems serve as a living barrier that protects aquaculture farms and coastal villages from flooding and land loss.
- **Water Quality Regulation:** Both mangroves and seagrasses improve water quality by filtering pollutants, excess nutrients, and sediments from runoff. Mangrove root zones can capture sediments, absorb and remove excess nutrients (like nitrogen and phosphorus), preventing harmful algal blooms and excessive turbidity in downstream waters. Seagrass meadows act as submerged biofilters, uptaking nutrients and stabilizing sediment with their roots. For aquaculture, this means cleaner water in culture ponds and coastal waters – leading to healthier fish stock and lower incidence of disease. Cleaner water also reduces operational costs (e.g. less frequent dredging of ponds, lower need for water treatment). These ecosystems can thus mitigate some climate-exacerbated water quality issues (such as increased runoff after intense rains or higher temperatures causing algal growth). The co-benefits of blue carbon ecosystems include counteracting eutrophication (excess nutrients) and even locally combating ocean acidification by absorbing CO_2[25,] all of which help maintain a stable environment for aquaculture.

[23] https://www.mdpi.com/2073-4441/14/23/3903
[24] https://sdgs.un.org/sites/default/files/2024-04/IAEA%20Input%20to%20SG%20Background%20note%202025%20UNOC.pdf#:~:text=nature,carbon%20through%20provision%20of%20and
[25] https://sdgs.un.org/sites/default/files/2024-04/IAEA%20Input%20to%20SG%20Background%20note%202025%20UNOC.pdf

- **Nursery Habitat for Fisheries:** Mangrove wetlands and seagrass beds are known as nursery habitats for many marine and brackish water species – including fish, crustaceans, and mollusks that are important for both wild fisheries and aquaculture seed stock. By restoring mangroves, the project helps increase populations of crabs, shrimp, and juvenile fish in the area, some of which may find their way into ponds or support adjacent capture fisheries. Seagrass meadows enhance local fish productivity and biodiversity[26] The improved habitat can thus support livelihood diversification (e.g. communities can do wild harvesting of crabs or oysters in mangroves as an extra income) and boost the sustainability of aquaculture (by maintaining genetic stock and natural food web connections).
- **Carbon Sequestration (Mitigation Co-benefit):** While not an adaptation benefit directly, the substantial carbon sequestration by mangroves and seagrasses is the basis for generating carbon credits which finance the adaptation activities. These ecosystems are carbon-dense – mangroves store carbon in biomass and deep soil peat, and seagrasses in their root mats and sediment. Protecting these ecosystems avoids CO_2 emissions (by preventing peat oxidation when mangroves are lost) and restoring them actively removes CO_2 from the atmosphere, contributing to climate mitigation. Through methodologies like Verra's VM0033 (for tidal wetland restoration), the project will quantify these GHG benefits[27]. The carbon revenue is essentially a payment for this service, which is then reinvested into adaptation (a creative feedback loop between mitigation and adaptation finance).

Adaptation Finance Gap and Access Barriers – Need for Innovation

Despite clear needs, financing for adaptation in Cuba (as in most developing countries) falls far short of what is required. The latest UNEP *Adaptation Gap Report* finds that global adaptation costs in developing countries are estimated around **$**215–387 billion per year by 2030, yet international adaptation finance flows in 2021 were only ~$21 billion – leaving an annual gap of $190–370 billion[28]. Cuba mirrors this global trend: national climate adaptation plans under *Tarea Vida* (the State plan for climate change) and sector strategies identify billions in required actions, but funding is severely inadequate. Projected climate action costs for Cuba are ~$13.8 billion by 2030, while from 2010–2018 Cuba received only ~$208 million[29] in international climate finance (≈$23 million/year). Most local adaptation priorities remain unfunded under current budgets. This finance deficit is acute for coastal ecosystem-based adaptation – traditional public funding and markets have largely overlooked the adaptation value of mangroves and seagrasses. There is thus a pressing need for innovative finance mechanisms to mobilize resources for resilience. The government has strong policy commitment (Cuba's updated NDC and

[26] https://sdgs.un.org/sites/default/files/2024-04/IAEA%20Input%20to%20SG%20Background%20note%202025%20UNOC.pdf
[27] https://verra.org/methodologies/vm0033-methodology-for-tidal-wetland-and-seagrass-restoration-v2-1/
[28] https://www.unep.org/resources/adaptation-gap-report-2023
[29] https://unfccc.int/sites/default/files/resource/UNFCCC_NBF_SD_Cuba_final.pdf

Tarea Vida emphasize nature-based solutions and have increased mangrove cover by 115,000 ha since 1990 through reforestation) but acknowledges that new funding sources are required to scale up these efforts.

The combined effect of these vulnerabilities is a large adaptation finance gap, especially for coastal communities and small-scale aquaculture. Very little finance flows to the local level or to blue economy sectors. In absolute terms, Cuba has received only on the order of US$100–200 million in international climate funds over a decade[30], whereas mitigation needs alone were estimated at USD 863 million per year. Adaptation needs, though not explicitly costed, are presumed similarly large. By comparison, global assessments find annual adaptation funding far below need (hundreds of billions of dollars shortfall)[31]. Local smallholders and fishermen face even steeper barriers: complex project preparation and accreditation requirements effectively exclude grassroots actors. Studies show that <2% of global climate finance reaches small-scale farmers (most of whom are highly vulnerable to climate shocks). Small producers lack collateral and formal land titles and have limited capacity to navigate complex application processes. In Cuba, most climate finance is channeled through national programs and major agencies; few projects are driven by community organizations. As a result, even technically high-potential activities (like mangrove restoration or community fisheries management) have struggled to tap international funds or carbon markets. Without targeted support, the many farmers and fishers in Holguín and Las Tunas remain underserved by current finance flows.

Key systemic barriers: Beyond limited finance flows, several systemic obstacles impede adaptation such as the i) lack of measurement and certification infrastructure for coastal blue carbon. Cuba has not yet established a national Measurement, Reporting and Verification (MRV) system for mangrove or seagrass carbon, ii) degradation of coastal ecosystem, iii) limited uptake of climate-smart practices in aquaculture and prevalence of traditional methods, iv) insufficient institutional frameworks for benefit-sharing

[30] https://unfccc.int/sites/default/files/resource/UNFCCC_NBF_TA_Cuba_2022.pdf
[31] https://www.undp.org/sites/g/files/zskgke326/files/2025-04/undp_ndc_insights_series_mar_2025.pdf

Degraded mangroves, Cayería Norte de Villa Clara, Cayó Santa María. Source: IAEA Technical Cooperation Programme Project RLA7028

Innovation Opportunity – Blue carbon markets and high-integrity standards:

Despite the challenges, Cuba's blue carbon ecosystems offer a major untapped opportunity for adaptation finance. Coastal wetlands – consisting of mangroves, seagrasses, and salt marshes – play a critical role in climate change mitigation and adaptation. These are estimated to sequester 4 to 10 tons of carbon dioxide per hectare annually and up to 10 times faster than tropical rainforests.[32]. Estimates suggest that restoring degraded mangroves and seagrasses worldwide could capture ~380 million tons of CO_2 and generate return of $11.8 billion in carbon finance by 2040.[33]. Cuba has an estimated surface coberage of 5500 km² of mangroves and 29000 km^{2,} seagrasses therefore represent a significant carbon sink (comparable to ~1.5% of the country's land area).

Incorporating this into voluntary carbon markets (VCM) could mobilize new funds for Cuba's coasts. Crucially, applying high-integrity frameworks like IPCC guidelines, ISO standards (ISO 14064, etc.), or Verra's VM0033 (mangroves) – would ensure that credits are scientifically robust and aligned with the newest integrity principles (e.g. the Integrity Council's Core Carbon Principles). The World Economic Forum's recently published High-Quality Blue Carbon Principles (endorsed at COP27) emphasizes that such projects must have credible baselines, robust MRV, and equitable benefit-sharing[34]. A Cuban program

[32] https://www.weforum.org/stories/2023/01/4-ways-to-unlock-the-power-of-blue-carbon/
[33] https://www.weforum.org/stories/2023/01/4-ways-to-unlock-the-power-of-blue-carbon/
[34] https://www.weforum.org/stories/2023/01/4-ways-to-unlock-the-power-of-blue-carbon/

that pre-approves projects under these standards can provide a transparent, high-quality source of carbon offsets that appeals to climate-minded investors, while delivering local adaptation benefits. The dual benefit (mitigation + adaptation) of healthy ecosystems has drawn private sector interest: companies like Meta and Salesforce have recently pledged to purchase millions of blue carbon credits.

Market Positioning and Demand: Global demand for blue carbon credits is rising rapidly. For example, a recent initiative saw corporations like Meta, Microsoft, and Salesforce commit to purchase 20 million tons of CO_2e in blue carbon offsets. Such buyers value the dual climate and social impact of these projects and are willing to pay a higher price for credits with verified community and ecosystem benefits. Blue carbon credits have traded at a premium compared to standard forest carbon, due to their rarity and co-benefits (such as biodiversity conservation, coastal protection, etc.). Published analyses indicate blue carbon credits have been valued between USD $5 and $35 per tCO_2. Recent market assessments show a weighted average price ~ $27 per credit for 2022–2023 for blue carbon, and some trades in 2024 hit record highs near $30[35] By building Cuba's capacity to issue high-quality credits (validated under VCS and transparently tracked), the project taps into this market interest.

Carbon Market Readiness and Trade Capacity

Current Status: Cuba is in the early stages of accessing international carbon markets. In September 2025, the government enacted *Resolution 106/2025* establishing a national framework for participation in carbon markets. This new regulation provides the legal basis for Cuba to engage in both voluntary and compliance carbon trading under Article 6 of the Paris Agreement[36.] It sets up operating principles (integrity, transparency, third-party verification, additionality, permanence, no double counting, sustainable development, etc.) to ensure any carbon credits meet international standards. Until now, Cuba's long-standing economic embargo and lack of a carbon market framework have limited its access to climate finance. The recent policy changes – approved by the Council of Ministers in Feb 2025 – signal high-level commitment to making Cuba an active player in the global climate economy, while prioritizing sustainability and equity[37]

Key Institutions and Partners: The Ministry of Science, Technology and Environment (CITMA) is the lead institution governing climate policy and carbon market oversight. CITMA chairs a new Carbon Market Technical Unit under Cubaenergía (part of the Nuclear Energy and Advanced Technologies Agency, AENTA)[38]. This technical unit is responsible for maintaining the national carbon credit registry, approving methodologies, and ensuring that projects align with Cuba's policy framework and international standards.

[35] https://www.nature.com/articles/s44183-025-00141-6?
[36] https://www.green.earth/news/cuba-launches-framework-for-voluntary-and-compliance-carbon-markets
[37] https://carbonunits.com/news/cuba-publishes-carbon-market-regulation-to-support-article-6-goals
[38] https://www.fundacioniris.cu/en/news/cuba-introduces-regulations-participation-carbon-markets

To provide the fundamental scientific and technical basis for this work, the Cienfuegos Environmental Studies Center (CEAC) will be a critical partner. CEAC serves as an International Atomic Energy Agency (IAEA) Collaborating Centre for nuclear and isotopic applications in Blue Carbon studies in Cuba and the Latin America region. The center is a national and regional reference for training in the quantification of Blue Carbon inventories and CO2 sequestration rates. It is part of the REMARCO network and recently, under the IAEA TC project CUB7011, has established the national strategy for Blue Carbon measurement in Cuba. Having already published a fundamental study on Blue Carbon in the seagrasses of the Gulf of Batabanó under international standards, CEAC provides a unique capacity for the development of the project's Measurement, Reporting, and Verification (MRV) component. Additionally, the IAEA, through the interregional project INT7022 Ocean Health, in which Cuba is a participant, developed the Methodological Guide for Developing National Capacities for Blue Carbon Assessment Using Nuclear and Isotopic Techniques. In parallel, the regional project RLA7028 introduced activities focused on assessing carbon inventories and sequestration in blue carbon (BC) ecosystems using nuclear and isotopic methods. Together, the guide and these practical efforts provide a standardized framework for evaluating carbon stocks and fluxes in coastal ecosystems, forming the technical foundation for the proposed interventions in Cuba.

Regional Training Course on Application of Nuclear and Isotopic Techniques for Assessing Carbon Stocks and Accumulation Rates in Seagrass Meadows. Sampling exercise using 2 techniques. Source: IAEA Technical Cooperation Programme Project RLA7028

Other crucial stakeholders include the Oficina Nacional de Normalización (ONN), which will support the adoption and development of standards and certification capacities (e.g. guiding adoption of ISO 14064/65 and accrediting local verifiers), and the Ministry of Foreign Trade and Investment (MINCEX), which facilitates transactions with foreign buyers and ensure carbon credit sales comply with national regulations on external trade and investment.

The IAEA's engagement aims to ensure that Cuba's emerging Blue Carbon monitoring and certification framework is scientifically robust, traceable, and aligned with international standards and market requirements, including the IPCC 2013 Wetlands Supplement, ISO 14064/14065, and Verra VM0033 methodologies.

Through this collaboration, the project will strengthen Cuba's technical and institutional capacities to quantify, verify, and report Blue Carbon stocks and fluxes in coastal ecosystems (mangroves, seagrasses, and saltmarshes). The Agency in collaboration with national counterparts will also facilitate regional knowledge exchange and South–South cooperation through its Regional Network on Marine Environmental (REMARCO) and the IAEA Technical Cooperation Programme, through the Division of Latin America and the Caribbean (TCLAC), connecting Cuba with other Small Island Developing States (SIDS) and coastal nations advancing MRV readiness and Blue Carbon finance mechanisms.

Enabling Access to Carbon Markets:

The project will strengthen Cuba's readiness to access both voluntary and compliance carbon markets by building the national infrastructure for robust, transparent, and scientifically rigorous measurement, reporting, and verification (MRV) of blue carbon assets. It will align with internationally accepted methodologies and standards, including the IPCC Wetlands Supplement, ISO 14064/14065, and Verra's VM0043 methodology for tidal wetlands and seagrass.

In the near term, the project will target the Voluntary Carbon Market (VCM) by embedding principles from the Integrity Council for the Voluntary Carbon Market (ICVCM)—notably its Core Carbon Principles (CCPs)—to ensure high environmental integrity, additionality, permanence, and equitable benefit-sharing. Registry-ready documentation, third-party validation protocols, and community-inclusive benefit mechanisms will be designed to meet evolving integrity requirements and buyer preferences. This project will translate Cuba's new carbon market framework into practice, positioning the country to issue high-quality blue carbon credits on the Voluntary Carbon Market (VCM).

Derisking and complementary instruments: to realize this opportunity, innovative finance tools can be deployed alongside carbon revenue to derisk investments. For example, parametric insurance products (index-based policies) can protect coastal aquaculture and farming communities from extreme events. Unlike conventional insurance, parametric plans pay out automatically when, for example, rainfall or wind speed exceeds a trigger threshold, giving small farmers immediate relief after a hurricane

or drought[39]. Coupling a blue carbon project with parametric cover would help communities recover after disasters.

To front-load investment and de-risk early implementation, the project will pursue at least one forward carbon finance agreement – such as an Emission Reduction Purchase Agreement (ERPA), Results-Based Payment (RBP) Memorandum of Understanding (MoU), or pre-issuance carbon credit option – with a credible corporate or public buyer (e.g., members of the Conservation International Blue Carbon Buyers Alliance, Mirova Natural Capital, or similar). These instruments would provide advance capital to scale up restoration and MRV pilots before credits are fully verified, accelerating delivery of ecosystem services and enabling faster reinvestment into climate-resilient aquaculture assets.

While ERPAs are more established in jurisdictional REDD+ contexts – such as Vietnam's US$51.5 million ERPA with the World Bank under the Forest Carbon Partnership Facility[40] (FCPF) - early applications in blue carbon are emerging. In late 2023, the Ca Mau Forest Department signed an exploratory Memorandum of Understanding (MoU) with UAE-based project developer Blue Forest, supported by the Vietnam Sustainable Shrimp Alliance, to assess restoration potential for 10,000 hectares of degraded mangrove forests[41]. This initiative aims to evaluate the feasibility of a large-scale blue carbon offset project integrated with aquaculture zones and marks one of the region's first attempts to assess carbon market pathways alongside ecosystem service co-benefits, such as water quality regulation and storm-buffering for shrimp farms. The International Union for Conservation of Nature (IUCN) and Ca Mau's Department of Agriculture and Rural Development (DARD) are leading a 2023–2027 initiative to restore mangroves in tandem with sustainable aquaculture[42]. Backed by funders such as Hyundai and Good Neighbors, the project has planted over 160,000 seedlings and is working with shrimp cooperatives to enhance ecosystem-based adaptation through salinity buffering and erosion control, supporting potential future monetization through blue carbon credit certification mechanisms. Vinamilk, Vietnam's largest dairy company, partnered with Gaia Nature Conservation o restore 25 hectares of mangroves in Ca Mau Cape National Park under its "Net Zero Forest" campaign[43], reflecting the growing corporate interest in the carbon and ecosystem service value of mangroves.

This project will adapt and validate such models in a small island developing state (SIDS) context, ensuring that all transactions align with emerging high-integrity standards, including the Integrity Council for the Voluntary Carbon Market (ICVCM) Core Carbon

[39] https://hplllc.com/empowering-small-farmers-the-case-for-parametric-insurance-in-building-climate-change-resilience-agriculture/

[40] https://www.worldbank.org/en/news/press-release/2020/10/22/vietnam-signs-landmark-deal-with-world-bank-to-cut-carbon-emissions-and-reduce-deforestation

[41] https://carbon-pulse.com/237551/

[42] https://en.mae.gov.vn/iucn-partners-to-restore-coastal-mangrove-forests-in-ca-mau-8964.htm

[43] https://van.nongnghiepmoitruong.vn/vinamilk-engages-in-regenerating-25-hectares-of-mangrove-forest-in-ca-mau-d360144.html

Principles, the IPCC 2013 Wetlands Supplement, ISO 14064 and ISO 14065, and Verra's VM0033 methodology for tidal wetlands and seagrass restoration.

Unlike broader ecosystem-based adaptation (EBA) programs – such as "Mi Costa" (Green Climate Fund/UNDP) or "Manglar Vivo" (Adaptation Fund/UNDP) – this project is specifically structured to leverage blue carbon ecosystem services and blue carbon finance to generate direct adaptation benefits for Cuba's aquaculture and coastal communities. A dedicated Blue Carbon Finance Mechanism (BCFM) will be established to manage and reinvest carbon revenues into eligible aquaculture and blue food systems' adaptation investments, including climate-smart aquaculture, processing and cold chain technologies, ecosystem restoration and maintenance, nature-positive insurance premiums, results-based grants for cooperatives, and de-risking instruments such as guarantees, credit enhancements, and carbon insurance. The project will also explore blended finance models and access to international voluntary carbon markets, while engaging credible intermediaries such as the Ocean Risk and Resilience Action Alliance (ORRAA), Conservation International, and the International Union for Conservation of Nature (IUCN) to broker early transactions under fair, science-based, and equitable terms. Together, these efforts will define a replicable model for channeling high-integrity blue carbon finance into community-led adaptation in vulnerable aquaculture and coastal food production systems.

Finally, developing a pipeline of investable blue carbon projects – with prepared feasibility studies, MRV protocols, and community participation plans – will reduce transaction costs. In sum, by combining carbon finance with tailored risk management (e.g. insurance, etc.) and proactive project development, the adaptation finance gap for Cuba's aquaculture communities can be dramatically narrowed.

Innovation in Leveraging the Dual Adaptation and Mitigation Benefits of Blue Carbon Ecosystems (Mangroves and Seagrasses) for Adaptation Objectives.

The project will build local institutional and technical capacity to leverage the dual adaption and mitigation benefits of blue carbon ecosystems and use carbon mitigation finance to deliver adaptation objectives (ecosystem restoration and coastal aquaculture adaptation). Coastal aquaculture farms will leverage the ecosystem services of blue carbon ecosystems (nature-based green protective infrastructure buffer against SLR, storm surge, wave impact, water quality improvement, etc.), while leveraging blue carbon credit revenue to finance climate-proofing productive assets and restore blue carbon ecosystems.

Innovation in Blue Carbon Revenue-Sharing and Governance

The project will establish a locally governed, participatory revenue-sharing Blue Carbon Finance Mechanism (BCFM) or Community Adaptation Fund (CAF) under the oversight of the newly established Carbon Market Technical Unit, with an inclusive multistakeholder

governance board model (incl. relevant government bodies, aquaculture and fisheries cooperatives and community representatives, women and youth.). The mechanism ensures transparent, equitable carbon revenue-sharing and reinvestment of least 80% of net revenues from certified blue carbon projects into aquaculture-linked adaptation priorities identified by aquaculture and fisheries cooperatives, such as ecosystem restoration, IMTA upgrades, climate-smart processing technologies, water security, renewable distributed energy sources, parametric insurance premiums, etc. creating a revolving locally governed adaptation fund for aquaculture, fisheries and coastal resilience.

The mechanism will be anchored in the new Carbon Market Technical Unit under Cubaenergía, but governed by local cooperatives, women, youth, and municipal committees – as a locally led, transparent, and equitable benefit-sharing system that transforms blue carbon credit revenues into predictable community adaptation finance.

Decisions will originate in Local Adaptation Committees (LACs) through participatory adaptation plans, ensuring inclusivity (gender/youth quotas), and accountability (social audits, grievance mechanisms, open data portals). This governance structure not only guarantees free, prior, and informed consent (FPIC)**,** but also devolves decision-making power and financial control to the lowest possible community level.

In most voluntary carbon projects, a significant share of revenues is absorbed by intermediaries, project developers, and transaction costs, leaving only a fraction for the local communities, smallholder famers and ecosystem stewardship. Studies show that verification, registry, and insurance requirements can divert 30% or more credit revenue into buffer pools and fees, while project developers and brokers may retain additional margins. As a result, many communities receive less than 20–30% of gross revenues**,** with some projects providing no clear evidence of benefit-sharing at all.

Ensuring High Integrity: To maintain trust, all carbon finance activities will be carried out with transparency and environmental integrity**.** The MRV results will be subject to third-party validation and verification. The project will apply conservative assumptions (e.g. not overestimating carbon sequestration rates) and follow buffer pooling rules to insure against any reversal (e.g. mangrove loss from a storm). Aligning with emerging best practices (such as Core Carbon Principles under the Integrity Council for Voluntary Carbon Markets) will further distinguish Cuban blue carbon credits as **"**gold-standard" climate assets. This integrity is not only ethical but economically smart: it positions Cuba to access premium markets and buyers (corporates seeking solid ESG outcomes), rather than selling cheap, low-quality offsets. By project end, the aim is to have produced a blueprint for financeable blue carbon projects in Cuba – complete with MRV protocols, stakeholder benefit-sharing, and investor connections – that can be replicated and scaled with support from larger funds (Green Climate Fund, etc.). In summary, the project marries rigorous carbon measurement frameworks and certification capacity with innovative blue carbon finance (risk transfer instruments, ex-ante sales, and community-led blue carbon market mechanism for equitable carbon revenue-sharing) to maximize the climate and financial returns of blue carbon for adaptation.

Adaptation Rationale: Cuba's eastern provinces (Holguín and Las Tunas) are highly exposed to climate threats – hurricanes, drought, saline intrusion, ecosystem loss – yet face an acute adaptation finance gap. Global adaptation needs are estimated at $215–387 billion annually, yet only ~$21 billion flows to developing countries, with <10% reaching the local level. In Cuba, projected climate action costs of ~$13.8 billion by 2030 far exceed resources; and between 2010–2018, Cuba received only ~$208 million in international climate finance. This leaves coastal communities, aquaculture and fisheries – critical to food security – grossly underfunded.

By linking ecosystem restoration to international carbon markets, the project creates a new revenue stream for adaptation. Blue carbon ecosystems sequester carbon 3 – 5× faster than terrestrial forests, generate premium credits and provide direct resilience benefits (storm surge buffering, water quality improvement, fishery productivity enhancement). Revenues from high integrity blue carbon projects will be reinvested via the BCFM into community-led adaptation, bridging the adaptation finance gap with a sustainable, revolving fund model with a locally led governance structure, devolving decision making to the local community and aquaculture cooperative level. This represents an innovative pathway to mobilize private capital for identified national adaptation priorities, aligned with Cuba's Tarea Vida and Updated NDC.

Project / Programme Objectives :

List the main objectives of the project/programme.

The overall objective of the project is to increase the climate resilience of coastal communities and aquaculture production facilities by leveraging blue carbon ecosystem services and carbon markets as a source of innovative adaptation finance to close the adaptation finance gap. The project will develop Cuba's first blue carbon MRV (Measurement, Reporting and Verification) system and standard, pilot community-led restoration activities that generate verified blue carbon credits, and create an innovative locally-governed participatory carbon revenue-sharing Blue Carbon Finance Mechanism (BCFM), established under the Carbon Market Technical Unit with a multistakeholder governance board model (incl. and fisheries cooperatives and community representatives, women and youth.) The mechanism will ensure transparent, equitable revenue-sharing and reinvestment of least 70-80% of net revenues from certified blue carbon projects into aquaculture-linked coastal adaptation priorities identified by cooperatives, creating a revolving source of locally governed adaptation finance.

1. **Develop a national Blue Carbon MRV and Standards Framework**

Establish MRV protocols and certification systems for mangroves and seagrasses, aligned with international standards.

2. **Implement community-led blue carbon and aquaculture-linked ecosystem adaptation pilots**

Restore mangroves and seagrasses linked to aquaculture sites, integrating climate-smart technologies aquaculture for resilience.

3. **Establish a participatory Blue Carbon Finance Mechanism (BCFM)**

Establish a community-governed revolving adaptation fund/facility to ensure equitable carbon revenue-sharing, with 70–80% of net revenues reinvested into locally identified adaptation priorities, governed by cooperatives, women, and youth. Strengthen local institutional ownership and capacity, build governance, fiduciary, and technical capacity of cooperatives, municipal committees, and national institutions to sustain and scale adaptation finance mechanisms.

4. **Knowledge management, learning, and scaling**

Document lessons, develop roadmap for scaling up and replication of best practice solution, support South–South exchanges, and integrate results into national policies (e.g., NDC, Tarea Vida) to enable replication across Cuba and Caribbean SIDS.

Project / Programme Components and Financing:

Fill in the table presenting the relationships among project components, outcomes, outputs, and countries in which activities would be executed, and the corresponding budgets.

For the case of a programme, individual components are likely to refer to specific sub-sets of stakeholders, regions and/or sectors that can be addressed through a set of well-defined interventions / projects.

Project/Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1. National blue-carbon MRV and standards framework established and operational	1.1. National Blue Carbon MRV and certification system established and integrated into national climate-transparency and reporting frameworks.	1.1.1. National Blue Carbon MRV protocols and methodologies developed, and validated in alignment with the IPCC Wetlands Supplement, ISO 14064/14065, Verra VM0033. 1.1.2. Laboratory infrastructure upgraded for biomass and sediment-carbon analysis and QA/QC and traceability protocols implemented. 1.1.3. National standardization and accreditation schemes integrated (ISO 14090/91). 1.1.4. At least 50 national/local experts (≥40% women/youth) trained in MRV sampling, QA/QC, analysis, carbon accounting and reporting 1.1.5. Digital MRV platform established with open-data architecture and blockchain-ready registry for secure data management, transparency and traceability of blue-carbon credits.	Cuba	1,300,000
2. Aquaculture-linked ecosystem	2.1. Coastal ecosystems and climate-exposed aquaculture	2.1.1. Baseline carbon stock assessments completed in pilot sites	Cuba	1,400,000

restoration pilots implemented (Holguín and Las Tunas)	assets strengthened through restoration and climate-smart practices 2.2. Blue-carbon restoration and aquaculture-linked adaptation projects prepared for certification and access to carbon finance, diversifying local livelihoods	2.1.2. ≈ 100 ha of mangroves and seagrasses restored through community co-management with aquaculture cooperatives in Holguín and Las Tunas, applying eco-engineering (elevated dykes, pond entires, etc.) to enhance resilience and productivity of aquaculture farms 2.1.3. Up to 5 aquaculture cooperatives trained and supported to adopt climate-smart aquaculture and water-management practices through demonstration pilots, improving yields and adaptive capacity. 2.2.1. Two Project Design Documents (PDDs) prepared and validated under *Verra VM0033* or equivalent blue carbon methodology and validated by accredited verification bodies (VVBs).		
3. Innovative Blue Carbon Finance Mechanism (BCFM) operational and market readiness demonstrated	3.1. Innovative blue-carbon finance mechanism established and operational, enabling sustainable reinvestment of carbon revenues into community-led adaptation and	3.1.1. Governance and benefit-sharing model for the BCFM formalized with inclusive representation of women and youth. 3.1.2. Legal and institutional procedures for carbon-credit transactions, reinvestment	Cuba	900,000

	ecosystem maintenance.	developed in coordination with relevant ministries. 3.1.3. Blockchain-based registry and smart-contract prototype piloted to record credit issuance, revenue flows and community benefit-sharing transactions, integrated with the national digital MRV system. 3.1.4. Feasibility study and roadmap prepared for the inclusion of a national Payment for Ecosystem Services (PES) scheme within the BCFM as an additional, sustainable revenue source for adaptation and conservation investments. 3.1.5. Investment Strategy for the BCFM approved, defining eligible investments, revenue allocation rules, risk-transfer integration, and procedures for reinvestment in community-led adaptation. 3.1.6. Financial instruments and credit-enhancement tools (e.g. parametric insurance, climate-risk guarantees, credit-loss buffers, forward-offtake term sheets, and registry-linked		

		contractual tools) designed and prepared to support early pilot transactions.		
4. Knowledge Management and Upscaling for national and regional replication	Evidence and knowledge on blue-carbon MRV and finance mechanisms generated and shared to support national and regional replication.	4.1.1. Knowledge products and training modules on MRV, finance mechanisms and adaptation benefits produced and disseminated nationally and regionally. 4.1.2. National workshops and South–South exchanges conducted to share lessons and promote scaling-up. 4.1.3. Roadmap developed for national and regional scaling of the innovative finance model, including integration of digital MRV and PES mechanisms	Cuba	650,000
5. Project/Programme Execution cost (9.5%)				306,675
6. Total Project Cost				4,556,675
7. Project Cycle Management Fee charged by the Implementing Entity (8.5%)				387,317
Amount of Financing Requested				4,943,992

The project contributes to the Adaptation Fund's Innovation Facility expected results, particularly **ER1 – Successful innovations rolled out**, by piloting a high-integrity Blue Carbon Finance Mechanism (BCFM) that links carbon revenues from restored coastal ecosystems to community-led adaptation investments in aquaculture and coastal resilience. It also contributes to **ER4 – Evidence base generated**, through the development of a national MRV framework and institutional capacities to quantify, verify and report adaptation and mitigation co-benefits, creating replicable models for other coastal developing countries.

Projected Calendar:

Indicate the dates of the following milestones for the proposed project/programme

Milestones	Expected Dates
Start of Project/Programme Implementation	Q2 2026
Mid-term Review (if planned)	Q2 2028
Project/Programme Closing	Q4 2030
Terminal Evaluation	Q2 2031

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project / programme components, particularly focusing on the concrete adaptation activities, how these activities would contribute to climate resilience. For regional projects describe also how they would build added value through the regional approach, compared to implementing similar activities in each country individually. For the case of a programme, show how the combination of individual projects would contribute to the overall increase in resilience.

Component 1: National Blue Carbon MRV & Standards Development

- Codify a Cuba Blue Carbon MRV Standard aligned with IPCC 2013 Wetlands Supplement, ISO 14064/14065 and a leading program methodology (e.g., Verra VM0033), including QA/QC, leakage/reversal risk rules, and social safeguards.
- Upgrade national laboratories and field capability: sediment corers, CHN analyzers, alpha spectrometer, gamma spectrometer, IRMS (Isotope analysis) reference materials, GIS/remote sensing toolchains; establish hydrological and sediment sampling protocols for mangroves and seagrass ecosystem.
- Train ≥50 national/local practitioners (≥40% women/youth) on Blue Carbon, sampling, lab analysis, GIS, data management, and audit readiness; constitute a national MRV roster and accreditation pathway.
- Produce site baselines (carbon stocks and organic carbon sequestration rates, hydrology, biodiversity & social co-benefits) and climate risk & technology needs assessments for Holguín and Las Tunas.

  Reliable, nationally owned blue carbon MRV and internationally aligned standards are foundational for channeling private/market finance into ecosystem-based adaptation. The standards ensure high-integrity carbon credits, lower cost and transaction risk and time-to-market for community projects, while laboratory upgrades and trained personnel build domestic capacity to measure resilience gains and monetize mitigation co-benefits that will be reinvested in adaptation.

Component 2: Aquaculture-linked ecosystem restoration pilots in Holguín & Las Tunas

- Implement two aquaculture-linked pilots (≈100 ha) that integrate:

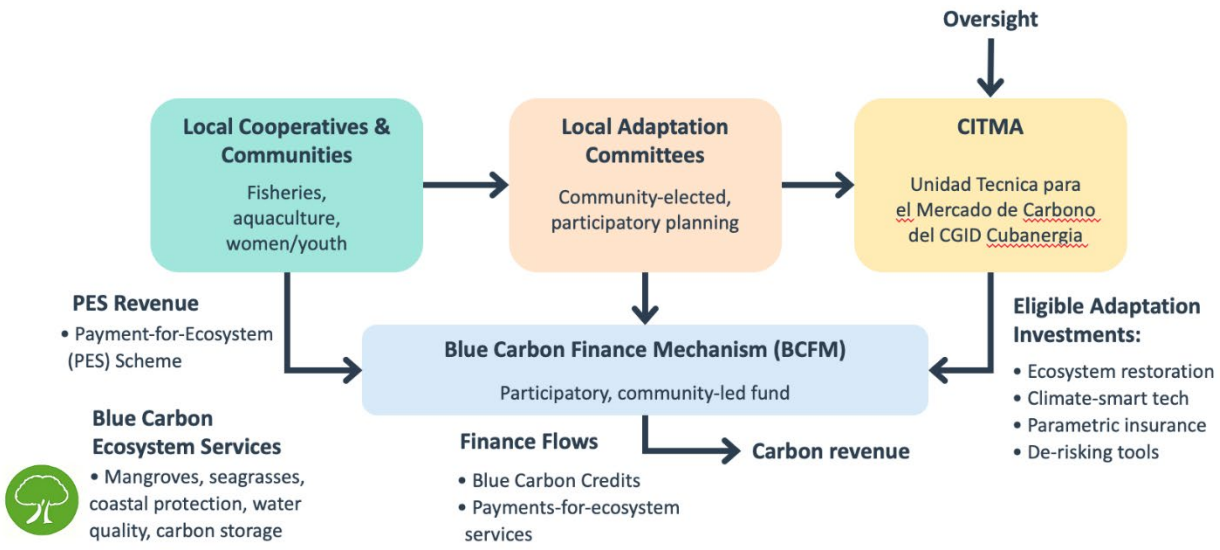
  - Mangrove buffers & hydrological reconnection (culverts, channel clearing) to dampen surge/waves and restore sediment accretion.
  - Seagrass restoration / water-quality polishing at aquaculture outfalls (seed sourcing, planting, fencing).
  - Climate-smart aquaculture practices, low-carbon processing and cold chain
- Establish community monitoring units (women & youth prioritized) for survival rates, water quality, biodiversity indicators and social co-benefits; embed FPIC and safeguards.

Restored mangroves/seagrasses constitute a nature-based coastal buffer, reduce physical exposure (against surge, erosion, etc.), improve water quality, strengthen the resilience of aquaculture-linked coastal assets and communities. Farm retrofits lower climate-related post-harvest loss, while community monitoring strengthens adaptive management.

Component 3: Demonstrating Innovative Blue Carbon Finance & Market Readiness

- Prepare two certification-ready PDDs and initiate third-party validation; clarify carbon tenure/benefit-sharing in Cuban context; align to ICVCM Core Carbon Principles.
- Establish a Participatory Blue Carbon Finance Mechanism (BCFM) under the oversight of CITMA and Technical Unit for the Carbon Market (UTMC) with Local Adaptation Committees (LACs); adopt by-laws that ring-fence 70-80% of net revenues to community-led priorities (resilient aquaculture, ecosystem upkeep, water security, parametric insurance premiums).
- De-risking toolkit: design parametric covers (wind/surge/drought indices), establish a reversal buffer pool and explore credit warranty/carbon insurance.
- Market access: structure forward offtake/ERPAs, standard term sheets, pricing transparency; create an open buyer engagement process and a public credit registry page.

The Blue Carbon Finance Mechanism is an innovative governance instrument, which channels carbon finance revenue directly into adaptation activities, strengthening the climate resilience of local communities, aquaculture and fisheries cooperatives. The locally-led participatory governance model of the mechanism ensures transparent and equitable benefit-sharing, and leverages mitigation co-benefits into predictable, locally governed adaptation funding, strengthening local community resilience. Embedding ownership at the lowest level, and adding risk-transfer instruments ensures communities recover faster after climate shocks, benefiting from a creating a revolving, shock-resistant source of adaptation capital, increasing community resilience



* CITMA/Technical Unit for the Carbon Market (UTMC), Cubaenergia: BCFM Oversight, MRV, Integrity, Transparency etc.

Figure 2 Blue Carbon Finance Mechanism (BCFM) - Participatory Governance Model

Component 4: Knowledge, Monitoring &Evaluation and Upscaling

- Establish a results-based M&E for monitoring and reporting project results
- Produce open MRV toolkits, a Cuba Blue Carbon Handbook, and policy briefs to integrate standards/BCFM into Tarea Vida and sector plans;
- Develop roadmap for scaling across SIDS and generate South–South exchanges (Caribbean SIDS).
- Develop roadmap to include a national Payment for Ecosystem Services (PES) scheme within the BCFM governance as an additional, sustainable revenue source for adaptation and conservation investments.
- Launch an open data portal (revenues, allocations, audits, social scorecards) to institutionalize transparency and trust; develop a Scale-Up Roadmap and mapping of bankable pipeline (additional provinces/sites).

Systematized learning, open data and policy integration enable replication at lower cost, institutionalize LLA practices, and align national policy/finance systems to sustain innovative adaptation financing and coastal ecosystem resilience model throughout the country and regionally, and/or beyond the grant.

The binding constraints are national (standards, labs, legal clarity, finance mechanism) and must be solved domestically to unlock private capital at scale. Pilots are placed where climate risk and aquaculture dependencies are highest (Holguín/Las Tunas) to maximize proof-of-concept and demonstration value for future national replication.

Theory of Change

Coastal communities and aquaculture producers in Holguín and Las Tunas face increasing climate hazards – storm surges, sea-level rise, saline intrusion, heat stress and water-quality deterioration – which undermine production, livelihoods and safety. At the same time, mangroves and seagrasses that once buffered these impacts have been degraded, reducing natural protection and weakening ecosystem services essential for aquaculture. The region is suffering from a severe adaptation finance gap and although Cuba has strong policy commitments related to GHG-reduction and leveraging carbon markets to mobilize finance, (Tarea Vida, NDC 3.0), its ability to access blue carbon markets is hindered by the absence of national MRV standards, certification systems, accredited analytical capacity, digital registries, and transparent benefit-sharing mechanisms.

The proposed project introduces three innovations:

1. **A national Blue Carbon MRV and Standards Framework**, aligned with IPCC/ISO/Verra, enabling generation of high-integrity blue carbon credits;
2. **Aquaculture-linked mangrove and seagrass restoration pilots**, demonstrating how ecosystem services directly enhance resilience and can generate high-integrity verified carbon assets;
3. **A participatory Blue Carbon Finance Mechanism (BCFM)** that reinvests 70–80% of net carbon revenues into locally identified community-led adaptation priorities.
4. **Risk-transfer innovations**, incl. e.g. parametric insurance premiums, climate-risk guarantees, etc. financed from carbon revenues, ensuring continuity of adaptation finance flows after climate shocks.

Together, these innovations create a **self-reinforcing adaptation finance loop/revolving adaptation fund** in which restored ecosystems generate verifiable credits, credits generate revenue, and revenue finances further adaptation actions, ecosystem maintenance and risk-reduction investments (e.g., climate-smart aquaculture, water management, parametric insurance).

Through improved institutional capacity, scientific credibility, inclusive governance and market readiness, the project will enable Cuba to mobilize new, predictable, long-term adaptation finance, while strengthening the resilience of vulnerable coastal communities and aquaculture systems. The model can be replicated across Cuba and other Caribbean SIDS, supporting a scalable transition toward nature-based, locally led climate adaptation.

IF Cuba adopts a national Blue Carbon MRV & Standards Framework aligned with IPCC 2013 Wetlands Supplement, ISO 14064/1406 and leading methodologies (e.g., Verra VM0033),

THEN blue-carbon credit projects (from mangroves, seagrasses) can be measured, verified and certified to high-integrity market standards, and access to carbon markets will be enabled,
BECAUSE internationally recognized protocols, accredited labs, QA/QC and registry-ready documentation are prerequisite conditions for credible issuance and third-party validation/verification of high integrity blue carbon credits

IF aquaculture-linked ecosystem restoration pilots reconnect hydrology, restore mangrove/seagrass habitat and embed climate-smart aquaculture practices,
THEN water quality improves, coastal flood/erosion risks decrease and farm productivity and yield/harvest/income reliability increase,
BECAUSE healthy coastal ecosystems buffer storm surge and salinity, trap sediments and nutrients, and provide nursery habitat that stabilizes production systems adjacent to farms.

IF a participatory Blue Carbon Finance Mechanism (BCFM) with transparent and participatory governance and ring-fenced revenue-sharing for adaptation is established,
THEN carbon revenue can be predictably and equitably reinvested into locally prioritized adaptation (e.g., ecosystem upkeep, resilient aquaculture, water security, parametric insurance, early warning, etc.) and revolving funding for aquaculture-linked ecosystem adaptation is generated.
BECAUSE the mechanism sets the investment strategy for aquaculture-linked adaptation strategy (e.g., 70–80% net reinvestment into adaptation), social safeguards/FPIC, and community decision-making via Local Adaptation Committees (LACs).

IF certification-ready projects (PDDs), buyer engagement tools (term sheets/ERPAs), and risk-transfer instruments (parametric triggers, credit-loss buffers) are prepared, THEN early buyers and investors can transact with confidence and provide upfront or forward finance, BECAUSE integrity risks and transaction frictions are lowered, price discovery is transparent, and reversal/force-majeure risks are managed.

IF digital MRV and registry interfaces (incl. blockchain-ready audit trails) are operational and coupled with open data/knowledge products, THEN performance, benefit-sharing and social safeguards can be monitored and replicated nationally and across SIDS, BECAUSE standardized data structures, traceability and documented lessons reduce replication cost and increase trust.

IF national institutions (CITMA/UTMC/ONN) and local cooperatives have the capacity, mandates and incentives to operate MRV, govern the BCFM and oversee enforcement, THEN blue-carbon finance becomes a durable source of adaptation funding, BECAUSE institutional ownership and quality infrastructure (standards, accreditation, conformity assessment) anchor market access and post-grant sustainability.

Therefore, restored ecosystems → verified credits → carbon revenue → mechanism for local reinvestment in adaptation → resilient aquaculture & communities → sustained funding for aquaculture adaptation and ecosystem maintenance. This self-reinforcing

loop mobilizes new, predictable adaptation finance and is designed for replication in Cuba and other Caribbean SIDS.

B. Describe how the project /programme would promote new and innovative solutions to climate change adaptation, such as new approaches, technologies, and mechanisms.

The project introduces a **first-of-its-kind adaptation finance model in Cuba**, directly linking blue carbon mitigation revenues to locally led adaptation. Key innovations include:

- **National Blue Carbon MRV system** aligned with IPCC, ISO, and Verra standards, enabling certification of mangrove/seagrass restoration.
- **Aquaculture-linked restoration pilots**, integrating mangrove and seagrass rehabilitation with climate-smart aquaculture technologies, reducing climate exposure while demonstrating the generation of high-quality, certifiable carbon credits.
- **Participatory Blue Carbon Finance Mechanism (BCFM)** with 70-80% of net revenues reinvested in community-identified adaptation priorities, governed by cooperatives, women, and youth.
- **Risk-transfer innovations**, incl. e.g. parametric insurance premiums, etc. financed from carbon revenues, ensuring continuity of adaptation finance flows after climate shocks.

This design integrates innovation, locally led adaptation principles, transparency, inclusion and equity into climate adaptation finance governance, aligning with the Adaptation Fund Innovation Facility's benchmarks for innovation, transformation, and responsiveness.

C. Describe how the project/programme aims to roll out successful innovative adaptation practices, tools, and technologies and/or describe how the project aims to scale up viable innovative adaptation practices, tools, and technologies.

The project will demonstrate, document, and develop (institutional, technical and financial) infrastructure, knowledge products and partnerships to replicate and scale up model for an innovative participatory blue carbon adaptation finance model:

- **Pilot proof of concept** in Holguín and Las Tunas (100 ha of restoration, aquaculture upgrades, verified carbon credits).
- **Replication tools** (MRV protocols, Project Design Documents, Blue Carbon Handbook) mainstreamed into national plans (Tarea Vida, aquaculture strategy, NDC).
- **South–South learning** via exchanges with other SIDS to share methodologies and governance models.

- **Finance scalability** through forward offtake agreements and alignment with Integrity Council Core Carbon Principles, positioning Cuba for Article 6 cooperation.
- **Institutional ownership** by anchoring MRV and governance in CITMA, Technical Unit for Carbon Markets and local cooperatives, ensuring long-term post-project sustainability.

This ensures innovation is not a one-off pilot, but a replicable model for channeling high-integrity carbon markets into community adaptation across Cuba and other SIDS.

D. Describe how the project / programme would provide economic, social, and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme would avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Expected Socio-Economic and Environmental Benefits

The project is expected to deliver direct benefits to approximately 1,500–2,000 individuals across 3–5 aquaculture cooperatives and coastal communities in Holguín and Las Tunas provinces. These include members of cooperatives, women-led restoration groups, and youth engaged in nature-based aquaculture practices. Key benefits include:

- **Economic**: Income and livelihood diversification through employment in restoration activities, participation in governance structures, and access to adaptation finance via the Blue Carbon Finance Mechanism (BCFM).
- **Social**: Strengthened local governance through inclusive decision-making and quotas for women and youth (≥40% target participation); training in restoration, monitoring and carbon finance; improved equity and access to climate adaptation support.
- **Environmental**: Restoration and sustainable management of approximately 100–150 hectares of mangroves and seagrasses, yielding shoreline stabilization, water quality improvements, and fish nursery enhancement. Estimated CO_2 sequestration: ~600–1,200 tCO_2e/year; blue carbon revenues of ~USD 15,000–30,000/year at current premium market rates (US$ 25–30/tCO_2e)[44].

All benefits will accrue primarily to **vulnerable aquaculture and coastal communities**. By design, at least 40–50% of direct beneficiaries are expected to be women (exceeding national sector averages[45]) and ~30% youth. For example, women's co-ops will be supported in fish processing and mangrove-based enterprises, ensuring they gain land/property and income rights. Youth will participate through technical training

[44] https://openknowledge.worldbank.org/entities/publication/a1abead2-de91-5992-bb7a-73d8aaaf767f
[45] https://www.fao.org/4/i2727e/i2727e02.pdf

(e.g. on aquaculture technology and GIS-based monitoring), youth-led mangrove patrols, and entrepreneurship programs, fostering long-term climate resilience. Thus, project outcomes explicitly address gender and age gaps: increased diversified incomes and food security for women-led households, new skills for young people, and strengthened social cohesion through participatory governance.The estimated number of target beneficiaries for all interventions will be ascertained during the full project proposal preparation stage under the PFG.

Preliminary Environmental and Social Risk Screening and Mitigation
Based on initial analysis, the project is likely to be classified as **Category B** under the Adaptation Fund's ESP—indicating potential site-specific, reversible risks requiring mitigation. These include:

- **Ecosystem disturbance** (e.g., sedimentation during restoration): to be mitigated by using native species, seasonal timing, and monitoring.
- **Access and equity risks**, such as elite capture or exclusion: addressed through transparent governance, grievance mechanisms, and benefit-sharing protocols.
- **Labour risks** in community restoration works: mitigated via compliance with national and ILO standards on safety and fair labor conditions.
- **Gender risks**, including unequal participation: managed through targeted actions such as gender-balanced governance bodies/boards (≥50% women/youth) and women-focused livelihood support.

Safeguard Instruments and Stakeholder Engagement to be finalized during the Project Formulation Grant (PFG) phase, the following will be undertaken:

- A full **Environmental and Social Management Plan (ESMP)**, including site-specific mitigation and monitoring measures.
- A **Gender Action Plan (GAP)**, guided by national policies and AF GP, with budgeted actions, gender-disaggregated indicators, and consultation protocols.
- Community-level **stakeholder engagement plans**, prioritizing women, youth, and vulnerable households, and applying Free, Prior, and Informed Consent (FPIC) where appropriate.
- Establishment of a **grievance mechanism** with gender-sensitive entry points and response procedures.

E. Describe or provide an analysis of the cost-effectiveness of the proposed project / programme and explain how the regional approach would support cost-effectiveness.

- Adaptation finance leverage: The project catalyzes private finance via carbon markets, multiplying AF resources. Each dollar of AF investment is expected to mobilize 2–3 dollars in future carbon revenues.

- Avoided losses: The cost of mangrove restoration per hectare is far lower than hard infrastructure (e.g., seawalls). Ecosystem-based solutions provide multiple co-benefits (storm protection + carbon sequestration) at lower cost.
- Regional spillovers: Though national, the project generates regional public goods by producing transferable MRV protocols and a Blue Carbon Handbook or Caribbean SIDS, improving cost-effectiveness compared to isolated country efforts.

F. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist. If applicable, please refer to relevant regional plans and strategies where they exist.

The project is fully consistent with:

- **Tarea Vida (2017)** – Cuba's national climate plan prioritizing coastal defense, aquifer protection, and mangrove restoration.
- **Updated NDC (2021)** – Commitments to ecosystem-based adaptation, aquaculture modernization, and nature-based solutions.
- **Blue Economy Strategy (2024, draft)** – Anchors aquaculture and ecosystem restoration as pillars of sustainable growth.
- **2030 National Development Plan** – Food security, renewable energy, and resilience are cross-cutting priorities.
  The project also aligns with **regional Caribbean SIDS strategies** on climate resilience and ecosystem-based adaptation.

G. Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the Environmental and Social Policy of the Adaptation Fund.

Consistency with national technical standards

- MRV systems will be developed in line with IPCC 2013 Wetlands Supplement and ISO 14064/14065 standards, Verra VCS
- Environmental assessments will follow Cuba's Law No. 81 on the Environment and CITMA's Environmental Impact Assessment guidelines.
- All construction (e.g., pond dike reinforcement, cold storage) will meet Cuban building codes for cyclone resistance.
- Compliance with AF Environmental and Social Policy will be ensured through screening, monitoring, and adaptive management

H. Describe if there is duplication of project / programme with other funding sources, if any.

The proposed Blue Carbon MRV and Innovative Finance for Coastal Resilience Project is complementary to, not duplicative of, existing national and international initiatives. It builds on their technical achievements while introducing new, market-based mechanisms to sustain and scale ecosystem-based adaptation (EBA):

- "Mi Costa: Resiliencia Costera" Project (Green Climate Fund, UNDP, 2021 – 2029) implements large-scale EBA interventions along approximately 1,300 km of Cuba's southern coastline, focusing on mangrove and swamp forest restoration, hydrological reconnection, and community early-warning systems to protect vulnerable coastal populations. The proposed project will complement and build on Mi Costa's restoration and governance capacity building results.
- "Manglar Vivo: Ecosystem-Based Adaptation for Coastal Protection" Project (Adaptation Fund, UNDP, 2014 – 2020), implemented in Artemisa and Mayabeque, demonstrated that mangrove rehabilitation effectively reduces storm surge, erosion, and saline intrusion. The proposed innovative blue carbon project will build on the project and standardize blue carbon MRV methodologies in alignment with IPCC Wetlands Guidance and ISO 14064/14065 standards, and extend their use to Holguín and Las Tunas, thereby establishing a verifiable baseline for blue carbon MRV and crediting.
- "Increased Climate Resilience of Rural Households and Communities through Agroforestry in the Eastern Region of Cuba (IRES)" Project (GCF/FAO, 2020–2027) focuses on inland agroforestry and food systems resilience through climate-smart production and rural value-chain development. The proposed project complements IRES by extending climate-resilient finance and monitoring capabilities to coastal ecosystems, enabling coordination between inland and coastal adaptation efforts and integrated management of Cuba's landscape – seascape interface.

  In parallel, the project will leverage scientific capacities established by the International Atomic Energy Agency (IAEA) and Research Network of Marine-Coastal stressors in Latin America and the Caribbean (REMARCO). The IAEA REMARCO Technical Cooperation Project on "Strengthening Marine and Coastal Research using Isotopic Techniques" (IAEA/REMARCO, completed 2024) enhanced Cuban laboratory capabilities for sediment dating, pollution tracing, and coastal ecosystem health assessments, and provided training to a regional network of marine scientists. The proposed Innovative Blue Carbon project will leverage local capacities through a technical partnership with the IAEA REMARCO network to integrate isotopic and nuclear techniques into blue carbon stock assessment, QA/QC, and certification processes, ensuring scientific integrity, traceability, and credibility of Cuba's MRV system in line with international standards.

  The project will also create synergies with the UNIDO proposal submitted in parallel under the regular country action window titled "Climate-Smart Aquaculture Systems and Resilient Blue-Food Industries", which targets the provinces of Holguín and Las Tunas to strengthen food security and the resilience of

aquaculture-based livelihoods, through the introduction of integrated multi-trophic aquaculture (IMTA), climate-smart circular processing systems, value-added production and income diversification in the aquaculture and fisheries sectors. The proposed Innovative Blue Carbon Finance project builds complementarities with the project and fills a critical gap by establishing the enabling blue carbon MRV, certification infrastructure, carbon market access capacities and locally led revolving Blue Carbon Finance Mechanism, allowing aquaculture farms and coastal cooperatives to generate adaptation finance from verified carbon credits, reinvesting proceeds into climate-proof infrastructure, ecosystem conservation, and risk-transfer instruments such as parametric insurance. Together, both initiatives will reinforce resilience and sustainability of Cuba's blue food systems and coastal ecosystems.

I. Describe the learning and knowledge management component to capture and disseminate lessons learned.

- Establish a **Blue Carbon Knowledge Hub** hosted by the Carbon Market Technical Unit with open-source MRV tools, datasets, and PDD templates.
- Produce **learning reports, knowledge products, training modules,** documenting lessons on MRV, finance, governance, and benefit-sharing mechanisms, and adaptation benefits for national and regional dissemination
- Produce roadmaps for national and regional scaling of the innovative finance model, incl. PES mechanism, integration of digital MRV and PES mechanisms
- Facilitate **South–South exchanges** with Caribbean SIDS and REMARCO through national and regional workshops.
- Use participatory **community scorecards** and audits to generate bottom-up learning.
- Disseminate lessons globally through the Adaptation Fund, UNFCCC NDC Partnership, and ICVCM networks.

J. Describe the consultative process, including the list of stakeholders consulted, undertaken during project / programme preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

Preparation involved multi-stakeholder consultations with:

- **National ministries**: CITMA, MINAL (aquaculture). CN endorsed by the DA. Letter is expected)
- **Local governments**: Holguín and Las Tunas municipalities. (will be done in the next weeks, latest through the PFG phase; conducting a localized consultation and needs assessment feasibility study)

- **Community cooperatives**: aquaculture and fisheries groups. (will be done through the PFG phase; conducting a localized consultation and needs assessment feasibility study)
- **Vulnerable groups**: women's associations, youth councils, and informal fish vendors. (will be done through the PFG phase; conducting a localized consultation and needs assessment feasibility study)
- **Academia**: Centro de Estudios Ambiental, es de Cienfuegos (REMARCO), AENTA, Instituto de Oceanología, universities. (Will be done in the next weeks, latest during the PFG phase; conducting a localized consultation and needs assessment feasibility study)

Consultations emphasize gender and youth participation, with sessions adapted for accessibility. Feedback shaped project design, including the decision to hardwire ≥80% local revenue reinvestment. The project will recognize the role and rights of indigenous peoples and marginalized groups in Cuba's coastal communities, particularly in Holguín and Las Tunas, where small-scale fishing and aquaculture communities include Afro-descendant, indigenous heritage groups, and rural populations with limited access to finance and services. Through **F**ree, Prior and Informed Consent (FPIC), these groups will be fully consulted before any intervention. They will also have reserved seats in Local Adaptation Committees (LACs) and in the governance structure of the Blue Carbon Finance Mechanism (BCFM), ensuring their perspectives shape priorities and benefit-sharing.

K. Describe how the project/programme draws on multiple perspectives on innovation from e.g., communities that are vulnerable to climate change, research organizations, or other partners in the innovation space, in the context in which the project/programme would take place.

The project integrates:

- **Community innovation** – locally led adaptation committees identify adaptation priorities and determine investments, and the project will conduct a localized needs assessment study, incl. Technology Needs Assessment (TNA) feasibility study incl. in consultation with fisheries and aquaculture farm owners and cooperatives.
- **Scientific innovation** – MRV protocols co-developed with REMARCO/IAEA, CEAC and Cuban universities.
- **Finance innovation** – introduction of ERPAs, carbon insurance, and parametric insurance and other risk transfer instruments
- **Institutional innovation** – creation of Cuba's first participatory Blue Carbon Finance Mechanism anchored in national law.
  This blend ensures the project is not only technically sound but also socially and financially transformative.

L. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

Without AF support, Cuba cannot establish the MRV and institutional infrastructure needed to access carbon markets. AF funds cover the incremental costs of adaptation innovation:

- Developing MRV systems and standards.
- Piloting aquaculture-linked restoration.
- Establishing participatory governance and benefit-sharing.

These investments will unlock sustained revenues from carbon finance, addressing the adaptation finance gap. AF funding therefore catalyzes a shift from one-off projects to a self-financing sustained adaptation finance model.

M. Describe how the sustainability of the project / programme outcomes has been taken into account when designing the project / programme.

- **Financial**: Verified carbon credits provide continuous revenue beyond project lifetime.
- **Institutional**: MRV and BCFM embedded in CITMA/ CITMA Technical Authority Office for Carbon Markets ensures national ownership.
- **Community**: Local Adaptation Committees and governance quotas build durable capacity.
- **Environmental**: Restored ecosystems are self-sustaining carbon sinks with long-term protective services.
- **Policy**: Integration into Tarea Vida, aquaculture strategy, and NDC ensures replication and continuity.

N. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project / programme.

- **Potential risks**: elite capture of revenues, unintended impacts of restoration (e.g., land-use conflicts), or exclusion of vulnerable groups
- **Risk management**: participatory governance, FPIC, grievance mechanisms, gender/youth quotas, and adherence to Cuban EIA regulations mitigate these risks.
- **Risk categorization**: The project is expected to be **Category B (medium risk)** under AF policies, with site-specific ESMPs to address any impacts. Overall, benefits vastly outweigh risks, with safeguards ensuring compliance and equity.

This project has been classified as a Category B project. Accordingly, a single comprehensive Environmental and Social Management Plan (ESMP) will be developed during the Full Proposal stage to ensure that all potential environmental and social risks are systematically identified, mitigated, and monitored. The ESMP will encompass all pilot interventions in Holguín and Las Tunas, including blue carbon restoration activities

in sensitive mangrove and seagrass ecosystems (Output 2) and the operationalization of the Blue Carbon Finance Mechanism (Output 3).

Given the physical works involved in the restoration activities, temporary disturbances and localized impacts may occur. The ESMP will outline clear mitigation measures, monitoring indicators, roles and responsibilities, timelines, and reporting arrangements. Specific provisions will address biodiversity protection (e.g., use of native mangrove and seagrass species, seasonal restrictions, avoidance of critical habitats), water quality safeguards, waste and resource management during restoration works, occupational health and safety measures for field teams, and chance-find procedures for cultural heritage.

The ESMP will be developed through participatory processes to ensure the meaningful involvement of women, youth, Afro-descendant and Indigenous peoples, and other marginalized groups throughout planning, implementation, and monitoring. A robust stakeholder engagement strategy and an accessible grievance redress mechanism will be included to prevent social exclusion and to ensure that community concerns are effectively addressed. The principle of Free, Prior and Informed Consent (FPIC) will be applied to guarantee that affected communities are fully informed, consulted, and able to participate in decision-making and benefit-sharing.

Safeguard provisions specific to the Blue Carbon Finance Mechanism will also be embedded within the ESMP. These will include environmental and social screening, eligibility and exclusion criteria. Integrating these elements will ensure that all downstream financed activities are environmentally sustainable, socially inclusive, and fully aligned with UNIDO's Environmental and Social Safeguards Policy and Procedures (ESSPP).

An Environmental and Social Safeguards (ESS) expert with regional experience will be engaged to lead the development of the ESMP, ensuring its quality, compliance, and effective implementation.

Checklist of environmental and social principles	**No further assessment required for compliance**	**Potential impacts and risks – further assessment and management required for compliance**
Compliance with the Law		
Access and Equity	✓	*Risk of uneven access to BCFM resources or elite capture;the project will manage via clear eligibility rules, open calls, scorecards, grievance mechanism,*

		outreach to remote groups.
Marginalized and Vulnerable Groups	✓	*Targeted inclusion (women, youth, low-income fishers); require pro-poor targeting, participation quotas, and monitoring of who benefits*
Human Rights		
Gender Equity and Women's Empowerment	✓	*the project will apply ≥50% representation in LACs/Board, gender-responsive budgeting, sex-disaggregated indicators, childcare/per-diems.*
Core Labour Rights		
Indigenous Peoples		
Involuntary Resettlement		
Protection of Natural Habitats		*Restoration works in mangroves/seagrass; avoid/mitigate construction footprints, seasonal restrictions, method statements; no conversion of critical habitat.*
Conservation of Biological Diversity	✓	
Climate Change	✓	
Pollution Prevention and Resource Efficiency		
Public Health		
Physical and Cultural Heritage		
Lands and Soil Conservation		

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project / programme management at the regional and national level, including coordination arrangements within countries and among them. Describe how the potential to partner with national institutions, and when possible, national implementing entities (NIEs), has been considered, and included in the management arrangements.

The project will be **implemented by the United Nations Industrial Development Organization (UNIDO)** as the accredited Multilateral Implementing Entity (MIE) of the Adaptation Fund. UNIDO will ensure overall fiduciary oversight, quality assurance, monitoring, and reporting to the Adaptation Fund Board, in compliance with the Fund's OPG. In addition to its supervisory role, UNIDO will execute selected activities directly, particularly those requiring international procurement, specialized technical services, knowledge-sharing and investor engagement. This partial execution is justified by external international banking and procurement constraints that affect Cuba's ability to acquire specialized equipment or services directly, and will therefore ensure timely implementation, fiduciary integrity, and efficient delivery of project outputs. UNIDO's Implementing Entity (IE) functions and UNIDO's Executing Entity (EE) functions will be performed independently.

The Ministry of Science, Technology and Environment (CITMA) will serve as the National Executing Entity, coordinating all national activities, overseeing fiduciary and technical management, and ensuring policy alignment with the State Plan for Confronting Climate Change "Tarea Vida" (2024–2030), the Nationally Determined Contribution (NDC 3.0), and Resolution 106/2025 establishing Cuba's national carbon-market framework. CITMA will chair the National Steering Committee and oversee the coordinated work of all institutions involved in implementation.

CITMA will act through its **Technical Unit for the Carbon Market (UTMC)**, hosted in the **Center for Energy Information and Development (CUBAENERGÍA)** under the **Agency for Nuclear Energy and Advanced Technologies (AENTA)**. UTMC will serve as CITMA's lead technical executing partner, responsible for developing and operating the national Blue Carbon MRV and certification system, managing data and registry functions, and ensuring methodological consistency with Article 6 of the Paris Agreement.

The **Oficina Nacional de Normalización (ONN)** will support the integration of international standards and accreditation schemes for validation and verification bodies, ensuring transparency and quality assurance across the MRV system.

The project envisages the **International Atomic Energy Agency (IAEA)** as a collaborating specialized UN technical partner, providing scientific, analytical, and capacity-building support for the design and validation of the MRV framework and strengthening national laboratory and analytical capacity through the **Centro de Estudios Ambientales de Cienfuegos (CEAC)**.

At the national level, **CITMA**, in coordination with the **Ministry of Foreign Trade and Investment (MINCEX)**, will ensure that carbon-credit transactions and related agreements comply with national trade and investment regulations.

At the local level, **provincial governments of Holguín and Las Tunas**, together with **Local Adaptation Committees (LACs)**, aquaculture and fisheries cooperatives, and

community organizations, will implement field-level restoration and adaptation activities under the technical guidance of CITMA and UTMC. The **LACs** will ensure participatory planning, monitoring, and equitable benefit-sharing, particularly for women, youth, and vulnerable groups.

The present project is governed by the provisions of the Standard Basic Cooperation Agreement between the Government of the Republic of Cuba and UNIDO, signed on 9 May 1990.

B. Describe the measures for financial and project / programme risk management.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.

E. Include a results framework for the project / programme proposal, including milestones, targets, and indicators.

F. Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund

Project Objective(s)[1]	**Project Objective Indicator(s)**	**Fund Outcome**	**Fund Outcome Indicator**	**Grant Amount (USD)**
Increase the climate resilience of coastal communities and aquaculture production facilities by leveraging blue-carbon ecosystem services and carbon markets as a source of	Number of development sector services, systems, mechanisms and assets strengthened to withstand and manage climate risks in aquaculture-linked coastal areas; Percentage of targeted aquaculture/coastal stakeholders reporting improved	Outcome 4. Increased adaptive capacity within relevant development sector services and infrastructure assets	Indicator 4. Number of physical assets, improved or constructed to withstand climate variability and change	4,954,000

innovative adaptation finance to close the adaptation finance gap.	capacity to plan, finance and implement adaptation actions.			
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1 – National blue-carbon MRV and standards framework established and operational	Number of institutions with strengthened capacity to design/operate MRV and standards; number of staff trained in MRV/QA/QC/carbon accounting.	Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	Indicator 2.1.1: Number of institutions supported to strengthen capacity to understand and address climate risks and resilience	1,300,000
Outcome 2 – Coastal ecosystems and climate-exposed aquaculture assets strengthened through restoration and climate-smart practices	Hectares of mangroves and seagrasses restored or under climate-resilient management; number of aquaculture cooperatives adopting climate-smart practices and technologies	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	Indicator 4.1.1: Number of development sector services strengthened to respond to climate variability and change, incl. core indicator 4: number of physical assets	1,400,000
Outcome 3 – Innovative Blue Carbon Finance	Number/type of innovative adaptation-finance	Output 8.1: Innovations identified and	Indicator 8.1.2: Number of innovations piloted that	900,000

Mechanism operational for community-based reinvestment in adaptation	mechanisms/tools developed and piloted; number of stakeholders accessing innovative finance services.	piloted that collectively enhance local innovation capacity and contribute to the development of local, national and regional adaptation innovation ecosystems	demonstrate local innovation participation and/or local innovation benefit	
Outcome 4 – Knowledge products and pathways for scaling generated and disseminated	Number of knowledge products and learning events produced and used by national/regional stakeholders.	Output 8.2: Innovations identified and piloted which build the adaptation innovation evidence-base and institutional capacity	Indicator 8.2.1: Number of innovation-focused knowledge products disseminated and/or learning events facilitated that support and enable innovation capacity at a local, national, and/or regional level	650,000

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

G. Include a detailed budget with budget notes, broken down by country as applicable, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

H. Include a disbursement schedule with time-bound milestones.

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

A. Record of endorsement on behalf of the government[46] *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project / programme. Add more lines as necessary. The endorsement letters should be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template; add as many participating governments if a regional project/programme:*

Mr. Lisbet Font Vila *Director* *International Relations* *Direction of International Relations of Science, Technology and Environmental Ministry of Cuba*	Date*: November 12, 2025*
(Enter Name, Position, Ministry)	Date*: (Month, day, year)*
(Enter Name, Position, Ministry)	Date*: (Month, day, year)*

6. 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.

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.	
Ganna Onysko *Ms. Ganna Onysko* *Senior GEF, GCF, AF Coordinator* *Division of Funding Partner Relations* *Directorate of Global Partnerships and External Relations* *United Nations Industrial Development Organization - UNIDO* *Implementing Entity Coordinator*	
Date: 19 December 2025	Tel. and email: +43 1 26026 3647 g.onysko@unido.org
Project Contact Person: *Alejandro Rivera Rojas* a.rivera-rojas@unido.org *+43 1 26026 3335*	
Tel. And Email: TO: g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org	

CITMA
MINISTERIO DE CIENCIA TECNOLOGIA Y MEDIO AMBIENTE

ADAPTATION FUND

DRI: 931/25

November 12, 2025

To:
Adaptation Fund Board Secretariat
c/o Global Environment Facility
1818 H Street NW, MSN N7-700
Washington, DC 20433, USA
Email: afbsec@adaptation-fund.org
Tel: +1 202 473-5943 (secretariat)
Fax: +1 202 522-3240/5

Subject: Endorsement for the project "Innovative blue-carbon finance for coastal and aquaculture resilience in Cuba"

In my capacity as **Designated Authority for the Adaptation Fund in Cuba**, I confirm that the above national project proposal is in accordance with the Government of Cuba's national and regional priorities for implementing adaptation activities to reduce the adverse impacts and risks posed by climate change in Cuba, specifically in the Holguín and Las Tunas provinces.

The project is aligned with Cuba's National Adaptation Plan (Tarea Vida) and Cuba's Updated Nationally Determined Contribution (2021), and national priorities for strengthening coastal resilience, sustainable aquaculture, and ecosystem-based adaptation, protecting and leveraging blue carbon ecosystems for adaptation and mitigation objectives. Particularly in provinces of Holguín and Las Tunas, which are highly vulnerable to drought and coastal erosion. It also contributes to advancing the country's Blue Economy Strategy under development by the Ministry of Science, Technology and Environment (CITMA) and the Ministry of Food Industry (MINAL).

The project will be implemented by the United Nations Industrial Development Organization and executed by the Ministry of Science, Technology and

Environment (CITMA), through its Technical Unit for the Carbon Market (UTMC) hosted in the Center for Information Management and Energy Development (CUBAENERGÍA) under the Agency for Nuclear Energy and Advanced Technologies (AENTA) and other national entities to be confirmed during the development of the full proposal. As requested by the Government of Cuba, UNIDO will also partially execute the project.

Accordingly, I am pleased to endorse the proposal **"Innovative blue-carbon finance for coastal and aquaculture resilience in Cuba"** with support from the Adaptation Fund. The project will be implemented by the United Nations Industrial Development Organization (UNIDO).

Sincerely,

Ministerio de Ciencia, Tecnología y Medio Ambiente
DIRECCIÓN DE RELACIONES INTERNACIONALES

Dr. C. Lisbet Font Vila

Designated Authority of Cuba for the Adaptation Fund

Project Formulation Grant (PFG)

Submission Date: December 19, 2025

Adaptation Fund Project ID:
Country/ies: Cuba
Title of Project/Programme: Innovative blue-carbon finance for coastal and aquaculture resilience in Cuba
Type of IE (NIE/MIE): MIE
Implementing Entity: United Nations Industrial Development Organization
Executing Entity/ies: United Nations Industrial Development Organization

A. Project Preparation Timeframe

Start date of PFG	June 2026
Completion date of PFG	October 2026

B. Proposed Project Preparation Activities ($)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount	Budget notes
1. Localized Climate Risk and Vulnerability Assessment (CRVA) and Technology Needs Assessment (TNA)	CRVA assessment report and prioritized technology needs for MRV, climate-smart aquaculture	$13,000	National expertise and support staff: US$ 10,000 National travel: US$ 3,000
2. Baseline report against the interventions	Baseline report	$ 13,000	National expertise and support staff:

proposed and indicators/targets aimed			US$ 10,000 National travel: US$ 3,000
3. Stakeholder Consultations at local and national level specifically on selected project sites, with local communities and cooperatives	Stakeholders' consultation report and community-level stakeholder engagement plan, prioritizing women, youth, and vulnerable households.	15,000	National expertise and support staff: US$ 6,000 National travel: US$ 4,000 Meetings and workshop expenses: US$ 5,000
4. National blue-carbon MRV Framework Co-Design technical consultations Consultations (CITMA, UTMC, ONN, CEAC, IAEA)	Stakeholder-informed Outline of national MRV framework.	$12,000	National/international technical expertise: US$ 12,000
5. Legal, Institutional & Policy Framework Review as a baseline for the design and Governance structure of the Blue Carbon Finance Mechanism (BCFM),	Assessment report of national regulations (carbon rights, data governance, verification, finance governance), incll recommendations for BCFM governance, benefit-sharing design and carbon-credit procedures.	$10,000	National/international technical expertise: US$ 10,000
6. Carbon Market & Buyer Scoping Analysis, financial modelling and monetization strategies for Component 3.	Market report and recommendations	$15,000	National/international technical expertise: US$ 15,000
7. Environmental and Social Management Plan (ESMP) assessment	Environmental and Social Management Plan (ESMP) and a UNIDO Environmental and Social (E&S) Screening form	$10,000	Required per AF ESS policy National expertise: US$ 6,000 National travel: US$ 3,000

8. Drafting of full project document (technic design, execution arrangements, safeguards gender, cost-effectiveness ToC and results architecture) incl. all required annexes:	1. Full Proposal, incl a required annexes. 2. HACT Assessments Completed HACT assessments (or confirmation of valid ones) for all proposed Executing Entities in accordance with UNIDO/HACT requirements.	$20,000	National/international technical expertise: US$ 20,000
9. In-depth gender analysis in order to effectively mainstream gender aspects into the design and formulation of the project	Gender Action Plan (GAP), a plan of action for gender mainstreaming is developed, Project document is gender mainstreamed and costs for implementation estimated	$10,000	National expertise: US$ 5,000 National travel: US$ 3,000
10. Validation workshop based on local consultations, workshops to discuss the specific project and program ideas (including translation into local languages, preparation of background papers, etc.	Validation workshop report	$20,000	Expertise and support staff: 10,000 Local travel: 3,000 Workshop expenses: 7,000
Implementing Entity Fee (8.5%) support cost	IE admin and technical support for project development, monitoring and supervision Compliance assurance	**$11,730**	Technical and admin support services.
Total Project Formulation Grant		**$149,730**	

Description of the Required Activity	Justification for the need and amount
Climate Risk and Vulnerability Assessment (CRVA)	The CRVA will assess climate hazards (e.g., storm surge, salinization, coastal erosion, heat stress) affecting aquaculture cooperatives and adjacent mangrove/seagrass ecosystems in Holguín and Las Tunas. It will analyze exposure, sensitivity, adaptive capacity, and identify priority ecosystem-based adaptation (EbA) interventions and restoration zones. A national climate risk expert will lead field assessments, supported by a local assistant. The CRVA will directly inform project design, the results framework, and risk management measures.
To conduct a baseline assessment	This assessment will generate the biophysical and socioeconomic baseline required to establish credible project indicators. Activities include: mapping ~100–150 ha of target mangrove/seagrass areas, assessing ecosystem condition, conducting baseline surveys of 4–5 aquaculture cooperatives, and gathering gender-disaggregated socioeconomic data in beneficiary communities (approx. 1,500–2,000 people). Data will be used to define targets for the full proposal, including livelihood metrics, ecosystem conditions, and institutional capacities.
To carry out detailed stakeholder consultations at local and national level	Inclusive consultations will engage aquaculture cooperatives, coastal communities, women's associations, youth groups, CITMA agencies, MINAL, provincial governments, scientific institutes, and other key actors. Consultations will refine the project design, validate proposed restoration sites, identify governance preferences for the Blue Carbon Finance Mechanism (BCFM), and ensure alignment with local priorities. Activities will include provincial workshops, focus groups, and bilateral meetings. Outputs: Stakeholder Engagement Plan (SEP) + FPIC roadmap where required.
To conduct an Environmental and Social Management Assessment (ESMA)	As required by the AF Environmental and Social Policy and UNIDO's Social and Environmental Safeguards (SESPP), a preliminary environmental and social screening will be undertaken. The ESMA will identify potential risks related to ecosystem restoration, aquaculture pilot activities, labor conditions, gender dynamics, and community access rights. It will define the project's preliminary risk category, propose mitigation measures, and produce a draft Environmental and Social Management Plan (ESMP) and screening checklist for each site. Includes expert-led site assessments.

In-depth gender analysis in order to effectively mainstream gender issues into the project design - Gender Action Plan (GAP)	A comprehensive gender analysis will assess the role, needs, priorities, and constraints of women and youth in aquaculture value chains, coastal livelihoods, and ecosystem restoration. The analysis will identify entry points for equitable participation in restoration activities, governance roles in the BCFM, capacity-building, and livelihood improvement. Outputs include: gender-disaggregated baseline data, identification of gender risks, and a full **Gender Action Plan (GAP)** aligned with AF Gender Policy. Includes field consultations in project sites.
To prepare the full-fledged project proposal as per the requirements of the Adaptation Fund	This includes drafting all mandatory sections of the AF Full Proposal: technical design, detailed budget, ESMP, Gender Action Plan, HACT assessment (as applicable), risk matrix, knowledge/learning plans, institutional arrangements, monitoring framework, BCFM operational blueprint, and annexes. The package will be prepared by a national adaptation expert in close coordination with UNIDO's headquarters team. All assessments (CRVA, baseline, ESMA, gender analysis) will be consolidated into the final proposal.
To organize validation workshops	Pre-validation workshops will be held in each project site (Holguín and Las Tunas) to ensure community ownership—especially by women, youth, and aquaculture cooperatives. A national validation workshop will gather key ministries (CITMA, etc.), provincial governments, scientific institutes (CEAC, REMARCO, etc.), and civil society to review and endorse the final AF Full Proposal. Activities include venue, facilitation, travel, and communication costs.

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	Ms. Ganna Onysko Senior GEF, GCF, AF Coordinator Division of Funding Partner Relations Directorate of Global Partnerships and External Relations United Nations Industrial Development Organization - UNIDO Implementing Entity Coordinator	
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