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 ecosystem-based adaptation and investment-readiness 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 (UNIDO)
Executing Entities:	Ministry of Science, Technology and Environment (CITMA) and UNIDO.
Amount of Financing Requested:	US$ 5,000,000 (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 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

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

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 (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.

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

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

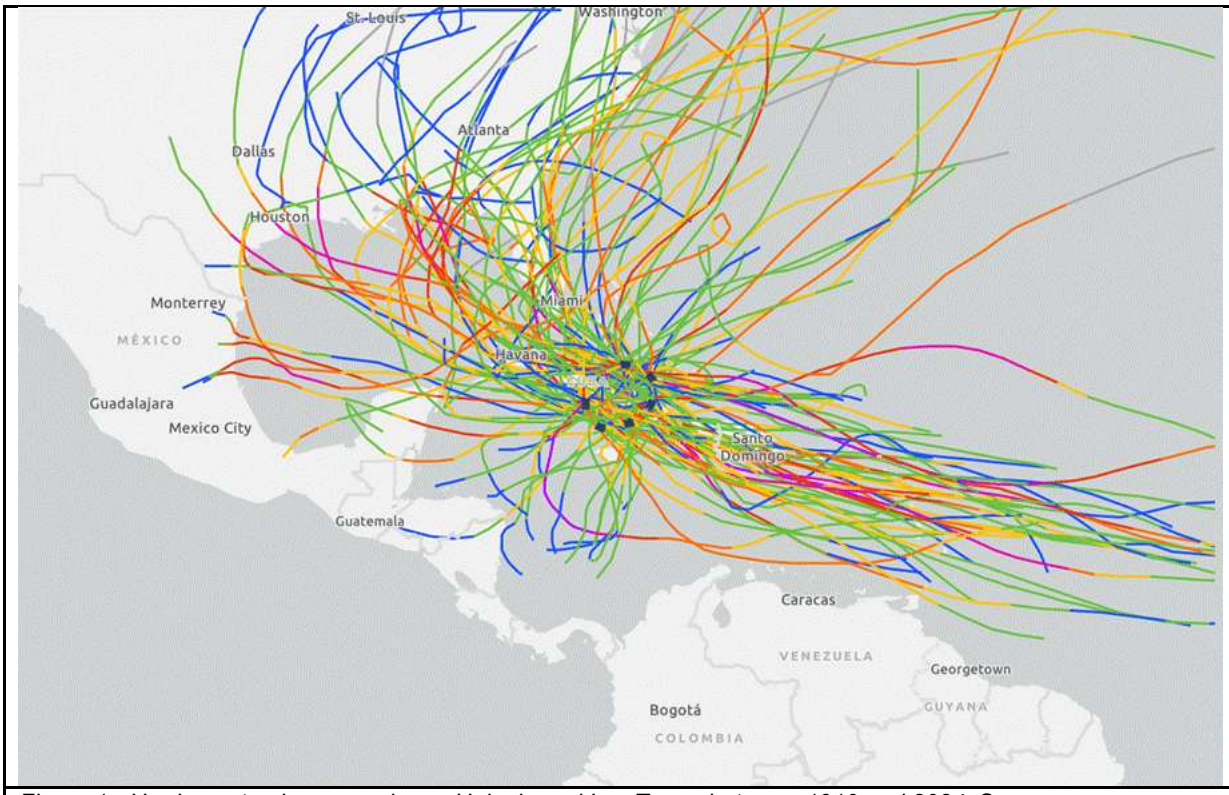


Figure 1 - Hurricane tracks crossed over Holguin and Las Tunas between 1910 and 2024. Source: https://oceanservice.noaa.gov/news/historical-hurricanes/

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 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 2 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 production10. 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.

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

The NDC 3.0 also notes barriers including restricted access to finance and technology for climate action. It recognizes the need for financial resources, technology transfer and capacity building through international cooperation. These constraints make it important to use the AF grant to deliver concrete adaptation outcomes directly while building practical systems for monitoring, maintaining and scaling those outcomes after project closure.

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 provides a strong basis for locally led adaptation and nature-based solutions, but

[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

implementation requires better evidence, maintenance planning, quality infrastructure and investment-readiness. The proposed project responds by operationalizing national policy goals through an ecosystem-based adaptation decision-support, O&M continuity and investment-readiness model for coastal ecosystems and aquaculture communities.

Ecosystem-Services for Coastal and Aquaculture Resilience

Coastal 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[20]. 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[21]. Healthy mangroves and seagrasses are thus 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[22]. Restoring and conserving **these** 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 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)[23].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 coastal ecosystems include counteracting eutrophication (excess nutrients) and even locally combating ocean acidification by absorbing CO_2[24,] all of which help maintain a stable environment for aquaculture.

[20] https://www.epa.gov/sciencematters/epa-science-matters-newsletter-how-deep-are-seagrasses
[21] Ihttps://www.mdpi.com/2073-4441/14/23/3903
[22] https://www.mdpi.com/2073-4441/14/23/3903
[23] 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
[24] 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[25] 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, coastal 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 and restoring them actively removes CO_2 from the atmosphere, contributing to climate mitigation.

Adaptation Finance Gap and Access Barriers

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[26]. 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[27] 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, where the adaptation value of mangroves, seagrasses and coastal wetlands is often insufficiently reflected in public investment planning, climate-finance pipelines and local maintenance budgets. There is thus a pressing need for innovative adaptation planning, MRV, ecosystem-service valuation and investment-readiness tools to mobilize resources for resilience. The government has strong policy commitment (Cuba's updated NDC and *Tarea Vida* emphasize nature-based solutions and have increased mangrove cover by 115,000 ha since 1990 through reforestation) but acknowledges additional finance, technology and capacity are required to maintain and scale these adaptation 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[28], 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)[29]. 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 access adaptation finance and long-term maintenance support. Without targeted support, the many farmers and fishers in Holguín and Las Tunas remain underserved by current finance flows.

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[25] https://sdgs.un.org/sites/default/files/2024-04/IAEA%20Input%20to%20SG%20Background%20note%202025%20UNOC.pdf

[26] https://www.unep.org/resources/adaptation-gap-report-2023

[27] https://unfccc.int/sites/default/files/resource/UNFCCC_NBF_SD_Cuba_final.pdf

[28] https://unfccc.int/sites/default/files/resource/UNFCCC_NBF_TA_Cuba_2022.pdf

[29] https://www.undp.org/sites/g/files/zskgke326/files/2025-04/undp_ndc_insights_series_mar_2025.pdf



Figure 3: Degraded mangroves, Cayería Norte de Villa Clara, Cayó Santa María. Source: IAEA Technical Cooperation Programme Project RLA7028

Key Institutions and Partners: The Ministry of Science, Technology and Environment (CITMA) is the lead institution governing climate policy, environmental regulation, coastal-zone management, ecosystem restoration priorities and national adaptation planning. CITMA's role is central to ensuring that project activities align with Tarea Vida, Cuba's NDC adaptation priorities, environmental permitting requirements and national safeguards procedures. For this project, CITMA will provide the institutional anchor for adaptation planning, coordination with provincial authorities, environmental screening, data governance and integration of project results into national and local resilience planning. 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 relevant to marine and coastal environmental assessment in Cuba and the Latin America region. The center is a national and regional reference for coastal ecosystem monitoring, laboratory analysis, sediment assessment, water-quality evaluation, technical training and scientific quality assurance. It is part of the REMARCO network and has supported national work on coastal ecosystem measurement and environmental monitoring. Having already published scientific work on seagrasses in 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. In the context of this Adaptation Fund project, CEAC's role should be framed primarily around adaptation-relevant ecosystem monitoring, scientific baselines, QA/QC, laboratory capacity, water-quality and sediment analysis, salinity and ecosystem-condition indicators, and technical training for national and local practitioner

Additionally, the IAEA, through relevant technical cooperation and knowledge-sharing initiatives, has supported the development of methodological guidance and capacity building for coastal and marine ecosystem assessment using nuclear and isotopic techniques. In parallel, regional cooperation through REMARCO and related IAEA-supported activities has strengthened capacities for marine environmental monitoring, sediment and pollutant tracing, laboratory methods, data quality and regional scientific exchange. Together, these technical resources provide a standardized scientific foundation for adaptation MRV, ecosystem-condition monitoring, coastal resilience assessment and transparent documentation of environmental co-benefits in Cuba.



Firgure 4 – 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 quality-infrastructure and verification-readiness capacities relevant to adaptation MRV, ecosystem monitoring, laboratory QA/QC, data quality and traceability. This may include guidance on relevant ISO standards for adaptation planning, environmental management, measurement systems and GHG co-benefit and biodiversity accounting/MRV, where applicable, as well as strengthening national procedures for standards-based monitoring and technical review. authorization, safeguards review and legal feasibility.

The IAEA's engagement aims to ensure that Cuba's emerging coastal ecosystem monitoring and adaptation MRV framework is scientifically robust, traceable, and aligned with scientific and quality-assurance good practice. Through this collaboration, the project will strengthen Cuba's technical and institutional capacities to measure, verify and report ecosystem condition and adaptation-relevant indicators in coastal ecosystems (mangroves, seagrasses, and saltmarshes). These indicators may include water quality, sediment dynamics, salinity buffering, hydrological condition, coastal protection functions, ecosystem health, biodiversity and carbon-stock co-benefits where relevant. 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 adaptation MRV, marine-coastal monitoring, laboratory quality assurance, data traceability and ecosystem-based adaptation.

Innovation Opportunity

The project's innovation is an integrated ecosystem-based adaptation decision-support model for climate-vulnerable coastal aquaculture and fisheries communities in Cuba. It brings together ecosystem-based coastal adaptation, climate-resilient aquaculture/fisheries upgrades, adaptation MRV, quality infrastructure, ecosystem-service valuation, safeguards, O&M planning, locally led governance and investment-readiness into one operational framework for planning, prioritizing, maintaining and scaling adaptation measures

Key innovations
The project adapts demonstrated, standards-based adaptation approaches in the Cuban coastal-aquaculture context, incl. (i) ecosystem-based coastal adaptation through mangrove, seagrass, wetland and buffer-ecosystem restoration and improved management; (ii) climate-resilient aquaculture/fisheries and post-harvest resilience measures using established water-quality, salinity, biosecurity, business-continuity and storm-preparedness practices; (iii) adaptation MRV, QA/QC and ecosystem-service valuation approaches grounded in recognized frameworks, including ISO 14090/14091, SEEA Ecosystem Accounting, the IPCC Wetlands Supplement where relevant, and national quality-infrastructure processes; and (iv) locally led governance, safeguards, social-audit, O&M planning and investment-readiness approaches.

The core innovation lies in the integration of demonstrated ecosystem-based adaptation and aquaculture/fisheries approaches with nationally anchored adaptation MRV, quality infrastructure and SEEA ecosystem-service valuation into an integrated adaptation MRV-anchored ecosystem-aquaculture-O&M and investment-readiness model in Holguín and Las Tunas. While the individual frameworks have been demonstrated elsewhere, the adaptation MRV, quality-infrastructure and SEEA ecosystem-service valuation framework and its integration into a locally governed adaptation model have not previously been applied to coastal and aquaculture adaptation in Cuba, which makes the model innovative in the national context. The model will be validated through the phased readiness, piloting, validation and scaling process, including verification of institutional coordination, data governance and QA/QC, integration of MRV and valuation evidence into planning and maintenance budgeting, clear O&M responsibilities, and inclusive participation that prevents elite capture.

The principal institutional and governance challenges are fragmented mandates and coordination across CITMA, MINAL/UEBs, ONN, CEAC/REMARCO-linked partners and provincial/municipal authorities; uneven data-sharing and technical capacities; integration of MRV and ecosystem-service valuation evidence into municipal, provincial and sectoral planning and maintenance budgeting; clear definition of post-project O&M responsibilities; and inclusive local participation that prevents elite capture and enables women, youth and vulnerable households to influence adaptation priorities.

Local Adaptation Committees (LAC), or equivalent local coordination arrangements, will support participatory prioritization, community monitoring, social audits and O&M feedback, while activity approval, safeguards compliance and implementation responsibilities will follow the project's agreed institutional arrangements. The model rests on several key assumptions: that the participating institutions will coordinate effectively and share data; that adaptation MRV and quality-assurance functions can be established and sustained with national institutional and laboratory capacities; that MRV and ecosystem-service valuation evidence will be taken up and used in municipal, provincial and sectoral planning and maintenance budgeting; that clear operation-and-maintenance responsibilities and financing will be secured for the post-project period; and that locally led, inclusive participation can be maintained so that benefits reach women, youth and vulnerable households and elite capture is avoided. These assumptions and challenges will be assessed through readiness protocols and baselines, pilot implementation in selected UEB-linked sites, validation through MRV and participatory monitoring, preparation of 1-5 investment-readiness studies, and adjustment of the model before replication and integration into planning systems.

High-Integrity Adaptation MRV and Data Quality
The project will establish a transparent adaptation MRV and ecosystem-monitoring approach to support credible planning, implementation and learning. MRV will track adaptation-relevant indicators such as ecosystem condition, water quality, salinity buffering, sediment dynamics, coastal protection functions, aquaculture/fisheries resilience, beneficiary inclusion and O&M needs. Data collection and analysis will apply conservative assumptions, clear baselines, quality assurance/quality control procedures, safeguards screening and documented methods so that results can support national planning, local decision-making and future investment-readiness.

Indicative MRV parameters at concept stage will be linked to the proposed intervention scale of at least 500 ha of restored or improved coastal ecosystems and 5-8 UEB-linked aqiuaculture/fisheries sites. Baseline

assessments during the PFG/full proposal stage will establish: ecosystem extent and condition; hydrology and salinity; shoreline/coastal exposure; water quality, including salinity, temperature, dissolved oxygen, pH, turbidity/TSS and nutrients where feasible; aquaculture/fisheries mortality, production losses, downtime and post-harvest losses; and beneficiary/livelihood indicators, including households reached, women/youth participation, income-loss risk and local O&M needs. Indicative operating parameters include two routine monitoring rounds per year, covering wet and dry seasons, annual GIS/remote-sensing updates, post-event checks after major storms where feasible, annual MRV/adaptation-benefits reporting, annual equipment calibration and periodic independent technical review.

Preliminary site-screening and indicative baseline parameters have been provided by CITMA through the technical scoping process, summarized in Annex I. Available concept-stage screening data include the wider screening area of approximately 214,519 ha, including approximately 18,370 ha of mangroves, 1,665 ha of marsh vegetation, 86,036 ha of seagrass and 13 associated protected areas. These data provide the initial basis for identifying candidate UEB-linked intervention areas and defining the MRV parameters to be verified during the PFG/full proposal stage. Final site-specific baseline values, including ecosystem condition, hydrology, salinity, water quality, shoreline/coastal exposure, aquaculture/fisheries mortality, production losses, downtime, income-loss risk, household vulnerability and O&M needs, will be verified and completed during the PFG/full proposal stage using CITMA technical data, MINAL/UEB and cooperative records, CEAC/REMARCO technical inputs, field surveys, remote-sensing analysis and community consultations.

The main purpose of the MRV system is to strengthen evidence-based adaptation planning, prioritize maintenance needs, document ecosystem-service benefits and generate replicable lessons for coastal aquaculture and fisheries resilience in Cuba and other SIDS contexts.

Project / Programme Objectives:

The overall objective of the project is to increase the climate resilience of coastal communities and aquaculture/fisheries productive sites in Cuba by strengthening ecosystem-based adaptation, climate-resilient aquaculture/fisheries systems, and the national and local capacities needed for locally led prioritization, monitoring, maintenance and scaling of adaptation benefits.

The project will demonstrate an integrated ecosystem-based adaptation (EbA) innovation model that combines coastal ecosystem restoration, aquaculture/fisheries resilience upgrades, adaptation MRV, quality infrastructure, SEEA ecosystem-service valuation, safeguards, local O&M planning and adaptation investment-readiness. The innovation lies in applying these elements as one operational model for aquaculture-linked coastal adaptation in Cuba, with measurable adaptation benefits and a pathway for replication in other vulnerable coastal landscapes.

To achieve this, the project will establish a national adaptation MRV, quality-infrastructure and ecosystem-service valuation framework; restore and improve management of priority mangrove, seagrass, wetland and buffer ecosystems linked to climate-exposed aquaculture/fisheries sites; implement targeted aquaculture/fisheries and post-harvest resilience upgrades; and strengthen local governance, safeguards, locally led prioritization, O&M continuity and investment-readiness arrangements.

All core ecosystem restoration, climate-resilient aquaculture/fisheries and livelihood-protection interventions are fully financed by the Adaptation Fund grant during project implementation. Post-project continuity will be supported through O&M planning, budget-entry points, ecosystem-service valuation and investment-readiness studies for future maintenance and scale-up.

Specific Objectives

1. Establish a national adaptation MRV, quality-infrastructure and ecosystem-service valuation framework

Codify nationally aligned adaptation MRV protocols, analytical capacity, data-governance arrangements and ecosystem-service valuation approaches for coastal ecosystems and aquaculture-linked adaptation, drawing on relevant international methodologies and standards to strengthen adaptation decision-making, safeguards, O&M planning and future investment-readiness.

2. Implement aquaculture-linked ecosystem-based adaptation and productive-sector resilience measures

Restore, rehabilitate or improve management of at least 500 ha of priority mangrove, seagrass, wetland and buffer ecosystems, and strengthen 5–8 UEB-linked aquaculture/fisheries productive sites through climate-resilient upgrades, targeted post-harvest loss-reduction measures and site-specific adaptation protocols.

3. Strengthen local adaptation governance, safeguards, O&M continuity and investment-readiness

Establish or strengthen locally led coordination arrangements that use MRV evidence, safeguards, community priorities, O&M cost estimates and ecosystem-service valuation to to support locally led prioritization of maintenance needs, social accountability and investment studies for sustaining and scaling adaptation measures.

4. Generate evidence, learning and replication pathways

Document quantified adaptation outcomes, lessons learned and performance data; produce practical guidance; support South-South exchange; and develop a replication roadmap for scaling the model across additional coastal landscapes and productive systems in Cuba and other coastal developing countries.

Project / Programme Components and Financing:

Project/Programme Components	Expected Outcomes	Expected Outputs	Countries	Amount (US$)
1.National adaptation MRV, quality infrastructure, safeguards, ecosystem accounting (SEEA EA) and ecosystem-service valuation framework	1. National and provincial systems for adaptation MRV, quality assurance, safeguards, ecosystem accounting and ecosystem-service valuation are operational and used to plan, monitor and sustain coastal ecosystem and aquaculture-linked adaptation.	1.1 National adaptation MRV protocol and methodology annexes codified and contextualized for Cuban coastal ecosystems and aquaculture-linked adaptation, using relevant international reference methodologies and national data systems. Indicative allocation: USD 200,000. 1.2 Laboratory, metrology, GIS/remote-sensing, QA/QC and verification capacities strengthened through national quality-infrastructure, standardization and accreditation pathways, including training for at least 50 practitioners, with at least 40% women/youth participation. Indicative allocation: USD 200,000.	Cuba	750,000

		1.3 SEEA Ecosystem Accounting and ecosystem-service valuation framework adopted and applied by national and provincial institutions to value ecosystem services that reduce climate risks and strengthen adaptation investment-readiness. Indicative allocation: USD 150,000 1.4 Climate-risk assessment and adaptation planning standards integrated into national standardization and accreditation pathways for ecosystem restoration and aquaculture-linked adaptation, including ISO 14090/14091, where relevant. Indicative allocation: USD 100,000 1.5. Recurrent MRV costs, local monitoring and institutional transition plan prepared, including indicative annual O&M cost estimates, data-governance roles, institutional responsibilities, and potential public, sectoral and local financing sources for covering recurrent costs after project closure. Indicative allocation: USD 100,000		
2.(a)Aquaculture-linked coastal ecosystem restoration demonstrations and (b) productive-sector resilience upgrades implemented (aquaculture/fisheries in Holguín and Las Tunas)	2. (a)Coastal ecosystems and (b) aquaculture/fisheries-linked livelihoods in Holguín and Las Tunas demonstrate increased resilience to climate hazards.	2.1 (a) At least 500 ha of priority mangroves, seagrasses, coastal wetlands and associated buffer ecosystems restored, rehabilitated or placed under improved climate-resilient management. Indicative allocation: USD 1,450,000. 2.2 (b)Climate-resilient, water-quality/salinity/temperature/dissolved-oxygen monitoring, drainage/circulation improvements, biosecurity, hatchery/nursery or seed-system resilience, storm-secure equipment and adaptive operating protocols. Indicative allocation: USD 850,000. 2.3 (b)Targeted post-harvest and livelihood-stabilization measures deployed, incl. small-scale modular cooling or ice/cold-storage	Cuba	2,851,726

		improvements at selected priority nodes, insulated storage and handling equipment, improved drying/handling, low emission backup energy systems for cold-chain continuity, last-mile early-warning and preparedness systems linked to national hydromet and disaster-risk-management systems. Indicative allocation: USD 551,726.		
3. Locally led governance, safeguards, O&M continuity and investment-readiness and financial resilience	3. Local institutions, communities and productive entities have increased capacity to operate, maintain and scale ecosystem-based adaptation and aquaculture resilience measures.	3.1 Local Adaptation Committees or equivalent coordination arrangements established or strengthened in target municipalities. Indicative allocation: USD 80,000. 3.2 Safeguards, grievance redress, social audit, gender/youth inclusion, tenure/permitting checks and community monitoring procedures operationalized. Indicative allocation: USD 80,000. 3.3 O&M continuity plans prepared for restored ecosystems, MRV/local monitoring functions and aquaculture resilience assets, including responsibilities, maintenance schedules, cost estimates and budget-entry points. Indicative allocation: USD 80,000 3.4 Financial-resilience support and 1-5 adaptation investment-readiness studies prepared for priority maintenance and scale-up measures, using MRV evidence, SEEA ecosystem-service valuation, safeguards requirements, O&M costs and community/cooperative priorities. Studies may cover ecosystem restoration and O&M, aquaculture resilience upgrades such as cold-chain, aeration and water-quality systems, or integrated ecosystem-aquaculture measures, and will support engagement with potential public, sectoral, cooperative, concessional and	Cuba	400,000

		private investment partners. Indicative allocation: USD 100,000 3.5 Municipal and provincial planning tools updated to integrate adaptation evidence, ecosystem-service valuation and priority resilience measures into annual planning, maintenance budgeting and adaptation investment preparation. Indicative allocation: USD 60,000		
4. Knowledge Management, learning and replication for adaptation scale-up	Outcome 4: Evidence, lessons and tools support adaptive management, national uptake and replication of the adaptation model in Cuba and the region.	4.1 Evidence and learning system established to capture adaptation results, safeguards performance, gender/youth participation, O&M readiness and replication potential, drawing on the MRV system under Component 1 and local monitoring under Component 3. Indicative allocation: USD 70,000 4.2 Practical guidance, technical notes and lessons learned produced on adaptation MRV, ecosystem-service valuation, quality infrastructure, coastal ecosystem restoration and aquaculture-linked resilience. Indicative allocation: USD 70,000 4.3 Knowledge exchange and South-South learning activities implemented with Cuban and regional institutions. Indicative allocation: USD 60,000 4.4 Replication roadmap prepared for scaling the model to additional coastal landscapes and productive systems in Cuba, including institutional roles, indicative costs and investment-readiness priorities. Indicative allocation: USD 50,000	Cuba	250,000
5. Project/Programme Execution cost				356,569
6. Total Project Cost				4,608,295
7. Project Cycle Management Fee charged by the Implementing Entity				391,705

Amount of Financing Requested	5,000,000

The project is expected to deliver direct, measurable climate-resilience benefits for aquaculture-linked coastal communities in Holguín and Las Tunas. These benefits will be achieved through ecosystem-based adaptation, climate-resilient aquaculture and fisheries upgrades, targeted post-harvest resilience measures, and local operation-and-maintenance arrangements. In parallel, the project establishes the adaptation MRV, quality-infrastructure, safeguards and ecosystem-service valuation systems needed to monitor, maintain and scale these benefits beyond the project period.
The project contributes directly to the two expected results identified for large innovation projects under the Fund's Medium-Term Strategy. It advances ER1 – Successful innovations rolled out by transferring demonstrated, standards-based adaptation approaches – ecosystem-based coastal adaptation, climate-resilient aquaculture and fisheries practices, standards-based adaptation MRV and SEEA methodology-based ecosystem-service valuation – into the Cuban coastal and aquaculture context, where they have not previously been applied, and combining them within a single, locally governed operational model. It advances ER2 – Viable innovations scaled up by piloting and validating this integrated model in Holguín and Las Tunas and generating the quantified adaptation outcomes, MRV and ecosystem-service valuation evidence, technical guidance and knowledge products that establish a defined pathway for scaling the validated model to other coastal landscapes in Cuba and to other small island developing States and coastal developing countries.
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Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	2028
Mid-term Review (if planned)	2031
Project/Programme Closing	2033
Terminal Evaluation	2034

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.

The proposed project strengthens the climate resilience of vulnerable coastal communities and aquaculture/fisheries-linked livelihoods in Holguín and Las Tunas through ecosystem-based adaptation, climate-resilient productive-sector upgrades, quality infrastructure, adaptation MRV, ecosystem-service valuation and local governance. The Adaptation Fund grant finances the core adaptation outcomes during the project period.

Coastal areas of Holguín and Las Tunas are exposed to increasing storm surge, coastal flooding, salinity intrusion, drought, extreme rainfall and cyclone impacts. These hazards affect aquaculture ponds, oyster and shrimp production, fisheries infrastructure, post-harvest handling, water quality and coastal settlements. Mangroves, seagrasses, wetlands and associated buffer ecosystems provide natural adaptation services by attenuating waves, stabilizing sediments, regulating salinity, improving water quality, supporting nursery functions and reducing exposure of adjacent productive assets and communities.

Unidentified Sub-Projects (USP)

The project includes a limited number of partially unidentified site-level activities that follow the Adaptation Fund's definition of Unidentified Sub-Projects (USPs), summarized in Table 2. These elements are not fully defined at the current concept note stage in order to preserve locally led, evidence-based adaptation planning while keeping the project bounded by a fixed geographic, activity and institutional framework. Candidate UEB-linked areas in Holguin and Las Tunas, eligible activity categories, principal institutions and adaptation objectives have already been identified. Final site boundaries, technical designs, beneficiary groups and site-specific safeguard measures will be confirmed during the PFG/full proposal stage and, where relevant, before implementation. The table below explains (i) why these activities cannot be fully formulated at design stage, (ii) the benefits of maintaining bounded flexibility, and (iii) how the benefit/risk trade-off will be managed through exclusion criteria, screening, consultation, approval, monitoring and the ESMF/ESMP. No AF-financed or project-controlled site-level activity will proceed until its location, scope, beneficiaries, risk category, permits, mitigation measures and UNIDO safeguard no-objection are documented. During the PFG/full proposal stage, the project will develop a full exclusion list, applicable to all USP-type activities, that prevents consideration of any high-risk or non-compliant activity — including Category A/high-risk activities, conversion or significant degradation of critical or natural habitats, significant biodiversity loss, involuntary resettlement or unresolved land/resource-access restrictions, major pollution or biosecurity risks, use of unsafe chemicals or non-approved species, inadequate occupational health and safety controls, and any works lacking the required permits — together with USP selection criteria, per-site environmental and social screening, and gender-responsive consultation protocols, all integrated into the project's ESMF/ESMP.

Table 1: Justification for USPs

USPs	Justification for non-identification at this stage (criterion i.)	Benefits for non-identification (criterion ii.)	Benefit/risk trade-off (criterion iii.)
Final selection of UEB-linked intervention sites and exact activity footprints in Holguin and Las Tunas	Candidate UEB-linked areas have been identified, but final boundaries and footprints require site-specific climate exposure analysis, restoration potential assessment, hydrology, salinity and water-quality data, protected-area/coastal-zone review, tenure/resource-access screening, beneficiary mapping and non-duplication checks.	This allows final selection to be evidence-based and community-validated rather than assumed before field verification. It improves adaptation impact by prioritizing sites where AF resources can most clearly reduce coastal hazard exposure, stabilize aquaculture/fisheries livelihoods, restore ecosystems and benefit vulnerable groups.	The uncertainty is limited because provinces, candidate areas, eligible activity types and institutions are known. Final selection will apply transparent criteria, consultation, gender/vulnerability analysis, Cuban regulatory review, AF ESP/GP screening and UNIDO safeguard no-objection. Activities that cannot satisfy these requirements will be redesigned or excluded. Site selection will also apply the project's exclusion list of high-risk or non-compliant activities (see narrative list above), to be finalized and integrated into the ESMF/ESMP at the PFG/full proposal stage.

Site-specific mix, design and footprint of ecosystem restoration, maintenance and climate-resilient aquaculture/fisheries upgrades under Component 2	The exact mix, methods and scale of restoration, ecosystem maintenance, aquaculture/fisheries resilience upgrades, water-quality/security measures and preparedness actions cannot be fixed before ecological assessment, production-system diagnostics, climate-risk mapping, feasibility review, Cuban technical standards review and consultation.	This enables activities to match actual ecosystem condition, climate exposure, aquaculture water-quality needs, infrastructure vulnerability and community priorities. It reduces maladaptation risk and improves utilization, O&M feasibility and direct benefits for women, youth, low-income workers, informal processors/vendors and other vulnerable groups.	All activities will be screened against the AF ESP, Gender Policy, UNIDO safeguards and Cuban law. Ineligible activities include Category A/high-risk activities, critical-habitat conversion, significant biodiversity loss, unresolved access restrictions, major pollution or biosecurity risks, unsafe chemicals, non-approved species, inadequate OHS controls and works lacking required permits. Site-specific mitigation will be integrated into the ESMF/ESMP.

Component 1: National adaptation MRV, quality infrastructure, safeguards and ecosystem-service valuation framework

This component establishes the evidence, quality-assurance and valuation systems needed to make ecosystem-based adaptation and aquaculture-linked resilience measurable, verifiable, quality-assured, maintainable and usable for planning. As a core innovation and deliverable, it includes the adoption of the System of Environmental-Economic Accounting Ecosystem Accounting (SEEA EA) — the international statistical standard for natural-capital accounting — and ecosystem-service valuation by Cuban institutions, enabling the climate-risk-reduction services of coastal ecosystems to be quantified and recognized in public and private decision-making, planning and adaptation investment preparation. The MRV framework also measures non-monetized environmental co-benefits (ecosystem/carbon sequestration and biodiversity condition) for completeness, learning and reporting.

The indicative activities listed under each output below illustrate the type of actions envisaged at concept stage. Their final scope, sequencing and site-specific design will be confirmed during the PFG/full-proposal stage, consistent with a locally led, evidence-based approach.

Expected Outcome: National and provincial systems for adaptation MRV, quality assurance, safeguards, ecosystem accounting and ecosystem-service valuation are operational and used to plan, monitor and sustain coastal ecosystem and aquaculture-linked adaptation.

Output 1.1. Codify a national adaptation MRV and quality-infrastructure protocol for coastal ecosystem and aquaculture resilience, so that coastal ecosystem adaptation benefits can be consistently measured, used in national planning, and reflected in NDC adaptation implementation and reporting, drawing on the IUCN Global Standard for Nature-based Solutions, FEBA EbA criteria, ISO 14090/14091, SEEA Ecosystem Accounting, the IPCC Wetlands Supplement, where relevant, for wetland ecosystem monitoring and complementary carbon-stock co-benefit evidence, and Cuban national quality-infrastructure processes.

Activity 1.1.1 Review and select applicable international reference methodologies (IUCN Global Standard for Nature-based Solutions, FEBA EbA criteria, ISO 14090/14091, SEEA Ecosystem Accounting and the IPCC Wetlands Supplement) and align them with Cuban coastal-ecosystem and aquaculture conditions.

Activity 1.1.2 Draft the national adaptation MRV and quality-infrastructure protocol, including methodology annexes for ecosystem-condition, water-quality and avoided-loss indicators.

Activity 1.1.3 Validate and formalize the protocol with ONN and CITMA and link it to NDC adaptation implementation and reporting.

Output 1.2. Strengthen laboratory, metrology, GIS/remote-sensing, QA/QC and verification capacities for monitoring salinity, water quality, dissolved oxygen, temperature, sediment dynamics and ecosystem condition.

Activity 1.2.1 Assess and upgrade laboratory, metrology and GIS/remote-sensing capacities at CEAC and partner institutions for monitoring salinity, water quality, dissolved oxygen, temperature, sediment dynamics and ecosystem condition.

Activity 1.2.2 Deliver QA/QC and verification training for at least 50 practitioners (at least 40% women and youth) and establish standard operating procedures and data-traceability protocols.

Output 1.3. Develop and apply a SEEA Ecosystem Accounting and ecosystem-service valuation framework to value ecosystem services that reduce climate risks and strengthen adaptation investment-readiness, including coastal protection, flood and storm-surge buffering, salinity regulation, water-quality benefits, nursery functions and avoided aquaculture/fisheries losses.

Activity 1.3.1 Develop a SEEA Ecosystem Accounting and ecosystem-service valuation framework covering coastal protection, storm-surge buffering, salinity regulation, water-quality and nursery functions, and avoided aquaculture and fisheries losses.

Activity 1.3.2 Apply the framework with national and provincial institutions to value priority ecosystem services to inform adaptation planning and investment-readiness.

Output 1.4. Integrate climate-risk assessment and adaptation planning standards, including ISO 14090/14091 where relevant, into national standardization and accreditation pathways for ecosystem restoration and aquaculture-linked adaptation.

Activity 1.4.1 Map climate-risk assessment and adaptation-planning standards, including ISO 14090/14091, against Cuban standardization and accreditation pathways.

Activity 1.4.2 Work with ONN and CITMA to integrate the selected standards into national pathways for ecosystem restoration and aquaculture-linked adaptation.

Output 1.5. Prepare a recurrent MRV, local monitoring and institutional transition plan, including data-governance roles, maintenance requirements, institutional responsibilities and potential public, sectoral and local financing sources for covering recurrent costs after project closure. At concept stage, recurrent operation of the adaptation MRV and local monitoring system is indicatively estimated at USD 140,000–220,000 per year after establishment, covering field monitoring, laboratory analysis, GIS/remote-sensing updates, database management, QA/QC and reporting, equipment calibration/replacement, and periodic independent technical review. The estimate assumes use of existing Cuban institutional and laboratory capacities and will be refined at full proposal stage based on final site selection, monitoring frequency, laboratory tariffs and institutional O&M agreements.

Activity 1.5.1 Estimate recurrent MRV and local-monitoring costs and define data-governance roles, maintenance requirements and institutional responsibilities for the post-project period.

Activity 1.5.2 Identify public, sectoral and local financing sources to cover recurrent costs and consolidate these into an institutional transition plan.

Component 2: Aquaculture-linked ecosystem restoration and productive-sector resilience upgrades

This component delivers the project's main locally led adaptation benefits by combining coastal ecosystem restoration with targeted aquaculture/fisheries resilience upgrades in the designated UEB-linked areas. Building on the screening and baselines established in Component 1, it restores, rehabilitates or improves

the management of at least 500 ha of priority mangroves, seagrasses, coastal wetlands and associated buffer ecosystems, and installs climate-resilient upgrades at 5–8 priority oyster, shrimp, pond-based, mariculture or fisheries sites in Holguín and Las Tunas. Complementary post-harvest and livelihood-stabilization measures and last-mile early-warning links reduce climate-related damage, downtime and income loss at landing, processing and logistics nodes, with women and youth prioritized for training and operation. Together these nature-based, hybrid and built measures strengthen natural coastal buffers, improve water quality and salinity regulation, support nursery functions and protect productive assets, with the resulting adaptation benefits measured and verified through the MRV system so that they can be maintained and scaled beyond the project period. Together these interventions are expected to deliver direct benefits to approximately 3,000–5,000 people (600–1,000 households) across the target cooperatives in Holguín and Las Tunas.

Expected Outcome: Coastal ecosystems and aquaculture/fisheries-linked community livelihoods in Holguín and Las Tunas demonstrate increased resilience to climate hazards through ecosystem restoration and climate-resilient productive-sector, post-harvest and livelihood upgrades.

Output 2.1. Restore, rehabilitate or improve management of at least 500 ha of priority mangroves, seagrasses, coastal wetlands and associated buffer ecosystems linked to UEB and cooperative aquaculture and fishing sites, using nature-based and hybrid eco-engineering solutions, incl. hydrological reconnection, channel/culvert rehabilitation, sediment retention, sediment and water-flow management, assisted natural regeneration, nursery or planting support, invasive/debris control and community-based maintenance, ecosystem and water-quality monitoring. Indicative allocation: USD 1,450,000.

Activity 2.1.1 Confirm final intervention sites through USP screening (climate-risk, vulnerability, biodiversity, social, tenure/permitting, safeguards and non-duplication), and establish site baselines covering ecosystem condition, hydrology, salinity, exposure, aquaculture/fisheries mortality, production losses, downtime, income-loss risk and community priorities, using the adaptation-MRV methodology developed under Component 1, during inception and before substantive works begin

Activity 2.1.2. Implement nature-based and hybrid eco-engineering restoration, including hydrological reconnection, sediment and water-flow management, assisted natural regeneration and nursery or planting support, across at least 500 ha of priority ecosystems.

Activity 2.1.3 Establish community-based maintenance and ecosystem and water-quality monitoring arrangements for the restored areas.

Output 2.2. Climate-resilient aquaculture and fisheries upgrades installed and operational in 5-8 priority UEB-linked oyster, shrimp, pond-based, mariculture or fisheries sites, incl. elevated and strengthened pond dykes, entrances, improved drainage, circulation and water-control structures; efficient aeration; salinity, pH, temperature and dissolved-oxygen monitoring; adaptive feeding, stocking and harvesting; biosecurity; seed-system resilience; storm-secure gear and equipment; and asset-specific adaptive operating procedures linked to EWS. Where appropriate, eco-engineering and nature-based site protection — vegetated buffers, living shorelines and ecosystem-conscious pond/intake protection — will be combined with built measures to reduce climate-related downtime and protect productive assets. Indicative allocation: USD 850,000.

Activity 2.2.1 Install water-quality, salinity, temperature and dissolved-oxygen monitoring and drainage and circulation improvements at the priority aquaculture and fisheries sites.

Activity 2.2.2 Strengthen biosecurity, hatchery, nursery or seed-system resilience and storm-secure equipment and introduce adaptive operating procedures.

Output 2.3. Targeted post-harvest and livelihood-stabilization measures deployed at selected landing, UEB and cooperative processing and logistics nodes, including modular cooling, ice or cold-storage improvements to reduce/avoid climate-related (heat, storm and hurricane damage to cold-chain and

process infrastructure) produce spoilage, income and subsistence losses; insulated handling and storage equipment; raised or storm-secure equipment platforms where needed; improved drying and sanitary handling; solar or low-emission backup power where feasible for cold-chain continuity during climate-related grid and storm disruptions; low-waste and by-product handling; climate-informed logistics and market linkages; deploy simple, low-cost, last-mile early-warning and preparedness systems - community-level dissemination of weather, storm-surge, salinity and flood warnings, locally appropriate communication channels and site-level preparedness and contingency protocols, linked to national hydromet and disaster-risk-management systems, for supported nodes, with min 40% prioritization of women and youth for training and operation. Indicative allocation: USD 551,726.

Activity 2.3.1 Deploy small-scale modular cooling and cold-storage, insulated handling and storage equipment and improved drying and sanitary handling at selected priority nodes, with backup power where feasible.

Activity 2.3.2 Establish last-mile early-warning and preparedness links to national hydromet and disaster-risk-management systems, prioritizing women and youth for training and operation.

Together, these grant-period activities and outcomes will reduce climate risks by strengthening natural coastal buffers, improving water-quality and salinity regulation, supporting nursery functions, reducing damage and downtime at productive sites, and improving preparedness for extreme weather disruptions. The adaptation outcomes are financed by the AF grant and do not depend on any future financing or revenue materializing.

Component 3: Locally led adaptation governance, safeguards, O&M continuity and investment-readiness arrangements

This component strengthens local governance and planning systems needed to operate, maintain and scale the adaptation measures delivered under the project. Local Adaptation Committees (LACs) or equivalent local coordination arrangements will support locally led, participatory adaptation planning, prioritization, monitoring, social audits, grievance feedback and O&M planning. Their composition, participation targets, decision-making role and relationship to CITMA/UNIDO fiduciary, safeguards and environmental permitting requirements will be fully defined during the PFG/full proposal phase. This approach will strengthen local ownership, inclusion and accountability while ensuring that final activity approval remains subject to safeguards, technical feasibility and fiduciary controls.

At concept stage, LACs are envisaged as advisory and participatory prioritization/social-accountability bodies. Their recommendations will inform CITMA-led site/activity selection, O&M planning and investment-readiness studies, with final resource-allocation and approval decisions retained by the agreed project governance structure and subject to UNIDO fiduciary, safeguards and technical due-diligence controls.

Expected Outcome: Local institutions, communities and productive entities have increased capacity to operate, maintain, plan, finance and scale ecosystem-based adaptation and aquaculture/fisheries resilience measures.

Output 3.1. Establish or strengthen Local Adaptation Committees or equivalent coordination arrangements in target municipalities, bringing together CITMA, MINAL, provincial and municipal authorities, research institutions, UEBs, cooperatives, community representatives, women, youth and vulnerable groups, to monitor, advise and prioritize adaptation solutions/investments matching local vulnerability context, in line with the principles of inclusive locally led adaptation (LLA)

Activity 3.1.1 Establish or strengthen Local Adaptation Committees or equivalent arrangements in target municipalities, bringing together CITMA, MINAL, provincial and municipal authorities, research institutions, UEBs, cooperatives and community representatives.

Activity 3.1.2 Ensure inclusive participation of women, youth and vulnerable groups and define committee roles in participatory prioritization and social accountability.

Output 3.2. Operationalize safeguards, grievance redress, social audit, gender/youth inclusion, tenure/permitting checks and community monitoring procedures for ecosystem restoration, aquaculture/fisheries resilience upgrades and post-harvest measures, considering the 13 protected areas associated with the CITMA-proposed sites.

Activity 3.2.1 Operationalize safeguards, grievance-redress, social-audit, tenure and permitting procedures for ecosystem restoration, aquaculture and fisheries upgrades and post-harvest measures.

Activity 3.2.2 Establish community-monitoring and gender and youth inclusion procedures linked to the adaptation MRV and local-monitoring systems.

Output 3.3. Prepare O&M continuity plans for restored ecosystems, MRV/local monitoring functions and aquaculture resilience assets, including responsible institutions, community roles, maintenance schedules, cost estimates, procurement needs and potential public, sectoral and local financing sources for recurrent costs.

Activity 3.3.1 Prepare O&M continuity plans for restored ecosystems, MRV and local-monitoring functions and aquaculture resilience assets, defining responsible institutions, community roles and maintenance schedules.

Activity 3.3.2 Estimate recurrent O&M costs and identify budget-entry points and potential public, sectoral and local financing sources.

Output 3.4. Prepare one to five adaptation investment-readiness studies for priority maintenance and scale-up measures, using MRV evidence, SEEA ecosystem-service valuation, safeguards requirements, O&M costs and community priorities. Studies may cover ecosystem restoration and O&M, aquaculture resilience upgrades such as cold-chain, aeration and water-quality systems, or integrated ecosystem-aquaculture measures. The studies will support engagement with public, sectoral, cooperative, concessional and potential private investment partners and may inform future detailed feasibility work for larger-scale adaptation investments.

Targeted financial planning, business plan preparation and investment-readiness support will be provided to UEBs, cooperatives, productive sites and relevant local service providers responsible for supported aquaculture/fisheries and post-harvest assets. Support will focus on O&M budgeting for productive assets and site-level nature-based and eco-engineering measures, lifecycle cost estimates, basic records for maintenance and avoided-loss tracking, and preparation of business cases for priority maintenance or scale-up measures.

Activity 3.4.1 Identify and prioritize candidate maintenance and scale-up measures and prepare one to five adaptation investment-readiness studies and business cases, drawing on MRV evidence, SEEA ecosystem-service valuation, safeguards requirements, O&M cost estimates and community/cooperative priorities.

Activity 3.4.2 Provide practical financial-readiness training and business coaching to UEBs, cooperatives, productive sites and local service providers — covering O&M budgeting for aquaculture/fisheries and post-harvest assets and site-level nature-based and eco-engineering measures, lifecycle-cost estimation, basic record-keeping for maintenance and avoided-loss tracking, and preparation of simple business cases — and facilitate engagement with potential public, sectoral, cooperative, concessional and private investment partners.

Output 3.5. Integrate project evidence into municipal and provincial adaptation planning, maintenance budgeting and future investment preparation, including practical templates for prioritizing measures by risk

reduction, avoided losses, ecosystem-service value, feasibility, safeguards and community benefit, and strengthening provincial, municipal and CITMA capacity to use MRV data, SEEA ecosystem-service valuation and O&M cost evidence in public adaptation budgeting and investment preparation.

Activity 3.5.1 Develop practical prioritization tools and templates that rank adaptation priority measures/investments by climate-risk reduction, avoided losses, ecosystem-service value, feasibility, safeguards and community benefit, drawing on the MRV and valuation evidence from Component 1, including appraisal and lifecycle-costing support so authorities can integrate MRV data, SEEA ecosystem-service valuation and O&M cost evidence into these cycles as standard practice.

Activity 3.5.2 Work with municipal and provincial authorities to embed the prioritized measures, ecosystem-service evidence and O&M cost estimates into annual planning, maintenance budgeting and adaptation investment-preparation cycles.

Component 4: Knowledge, learning and replication for ecosystem-based adaptation scale-up

Expected Outcome: Evidence, lessons and tools support adaptive management, national uptake and replication and scale-up of the integrated Coastal EbA in Cuba and other coastal/SIDS contexts.

The project's central innovation is the integration of the adaptation MRV framework, SEEA ecosystem-service accounting and valuation, ecosystem restoration, aquaculture-linked resilience and locally led governance into a single, replicable integrated Coastal EbA model. This component captures evidence from implementation, supports adaptive management and prepares the model for replication and scale-up in other vulnerable coastal landscapes and productive systems in Cuba.

Output 4.1. Establish and operate an evidence and learning system to capture adaptation results, safeguards performance, gender/youth participation, O&M readiness, institutional uptake and replication potential.

Activity 4.1.1 Set up the evidence and learning system, defining a set of result, safeguards, gender/youth and O&M-readiness indicators drawn from the Component 1 MRV system and Component 3 local monitoring, with clear data-collection responsibilities.

Activity 4.1.2 Hold periodic learning reviews that synthesize results and feed lessons back into site management, safeguards and O&M decisions to support adaptive management.

Output 4.2. Produce practical guidance, technical notes and lessons learned on adaptation MRV, quality infrastructure, SEEA ecosystem-service valuation, ecosystem restoration, aquaculture/fisheries resilience and local adaptation governance.

Activity 4.2.1 Draft practical guidance and technical notes on adaptation MRV, quality infrastructure, SEEA ecosystem-service valuation, coastal-ecosystem restoration and aquaculture/fisheries resilience, based on the project's own experience.

Activity 4.2.2 Package the guidance into accessible formats for national and provincial institutions, practitioners and cooperatives, and disseminate through CITMA and partner channels.

Output 4.3. Facilitate national, regional and South-South knowledge exchange on the integrated, participatory Coastal EbA model – combining locally led ecosystem-based adaptation, ecosystem-service accounting and valuation, adaptation MRV, aquaculture-linked resilience and climate-risk-informed planning to deliver measurable adaptation outcomes.

Activity 4.3.1 Organize national and provincial exchange events that share the model and its results with CITMA, sector institutions, provincial/municipal authorities, UEBs and cooperatives.

Activity 4.3.2 Support South–South exchange with other SIDS and coastal developing countries, using the REMARCO network and the IAEA Technical Cooperation Programme where relevant.

Output 4.4. Prepare a replication and scale-up roadmap to replicate and scale the model to additional Cuban coastal landscapes and productive systems, including institutional roles, indicative cost ranges, priority investment concepts and requirements for maintaining monitoring and adaptation decision-support functions.

Activity 4.4.1 Consolidate the validated model, its results and indicative cost ranges, and identify candidate coastal landscapes and productive systems in Cuba for replication.

Activity 4.4.2 Prepare the replication roadmap, setting out institutional roles, priority investment concepts and the monitoring and decision-support functions needed to sustain and scale the model, and align it with Tarea Vida and the NDC adaptation agenda.

Theory of Change

Coastal communities and aquaculture and fisheries production sites in Holguín and Las Tunas are increasingly exposed to sea-level rise, storm surge, coastal flooding, cyclones, salinity intrusion, drought, extreme heat and water-quality stress, with rising climate-related losses to production and livelihoods. Despite strong national scientific capacity and clear adaptation priorities, several interconnected barriers limit the uptake, maintenance and scaling of coastal adaptation in the target provinces:

- Adaptation data and valuation – site-level adaptation data are limited and non-standardized, with no aligned MRV, quality-infrastructure or ecosystem-service valuation systems across national, provincial and local levels; the adaptation value of coastal ecosystems is not accounted for in public or private investment planning, budgeting or climate-finance pipelines.
- Degraded ecosystems – mangroves, seagrasses and coastal wetlands are not consistently restored or managed as adaptation assets for coastal protection, salinity regulation and habitat resilience.
- Vulnerable livelihoods – climate-exposed aquaculture and fisheries-linked livelihoods and productive assets are typically designed without climate-resilience or business-continuity measures.
- Finance and governance gaps – adaptation finance, bankable resilience investment cases, ecosystem operation-and-maintenance (O&M) funds and inclusive local governance arrangements are insufficient to fund and sustain adaptation.

Tarea Vida and Cuba's NDC identify restricted access to finance, technology and capacity as the binding constraints on adaptation. The Adaptation Fund grant meets the full cost of adaptation — the incremental, climate-driven measures that cannot be covered through domestic budgets, markets or development-as-usual investment.

IF *(*change pathway)

- national and provincial institutions operate an adaptation MRV, quality-infrastructure, safeguards and SEEA ecosystem-accounting and valuation framework to identify, monitor and value coastal-ecosystem adaptation benefits and to prepare bankable adaptation investment cases;
- priority mangrove, seagrass, wetland and buffer ecosystems are restored, rehabilitated or placed under improved climate-resilient management using nature-based and hybrid eco-engineering solutions;
- UEB-linked aquaculture and fisheries production sites receive targeted resilience upgrades, post-harvest loss-reduction measures (such as cold-chain and drying) and early-warning-informed preparedness protocols; and
- local institutions and communities have O&M-continuity arrangements, safeguards procedures and investment-ready project concepts for maintenance and scale-up;

THEN

coastal ecosystems and aquaculture/fisheries production systems in Holguín and Las Tunas will demonstrate increased resilience to climate hazards and reduced exposure to storm surge, coastal flooding, salinity intrusion, drought, extreme rainfall and cyclones; climate-related production and income losses will fall; coastal ecosystem services will be more accurately measured, valued and appraised, and integrated into national and local adaptation planning, budgeting and financing; and coastal adaptation will become more bankable and investment-ready – with an improved risk profile and a stronger ability to mobilize public, concessional and blended finance, and to attract private and results-based investment over time.

BECAUSE

restored and better-managed mangroves, seagrasses, wetlands and buffer ecosystems provide natural adaptation services – wave attenuation, sediment stabilization, salinity regulation, water-quality improvement and nursery functions – that reduce the exposure and vulnerability of adjacent productive assets and communities. Hybrid eco-engineering and climate-technology upgrades keep production stable under heat, salinity and storm stress, reducing mortality, downtime, post-harvest losses and income-loss risk. Adaptation MRV and SEEA ecosystem-service valuation make these benefits measurable and usable for O&M planning, public budgeting and investment appraisal — converting one-off restoration into a maintained, financed and replicable system. The Adaptation Fund grant finances the concrete adaptation measures during implementation, while MRV, valuation and O&M planning sustain monitoring, maintenance and future scale-up.

ASSUMING

- participating institutions coordinate effectively and share data;
- adaptation MRV and quality-assurance functions can be established and sustained with national institutional and laboratory capacities;
- MRV and ecosystem-service-valuation evidence is taken up and used in municipal, provincial and sectoral planning and maintenance budgeting;
- clear O&M responsibilities and financing are secured for the post-project period;
- locally led, inclusive participation is maintained so that benefits reach women, youth and vulnerable households and elite capture is avoided; and
- final sites are confirmed through climate-risk, safeguards, feasibility, tenure/permitting and non-duplication screening.

Innovation

The project demonstrates a replicable innovation model for aquaculture-linked coastal adaptation in Cuba. The innovation lies not in any single component but in integrating ecosystem-based adaptation, aquaculture and fisheries resilience upgrades, adaptation MRV, quality infrastructure, SEEA ecosystem-service valuation, safeguards, O&M planning and investment-readiness into one operational model for measurable, maintainable and scalable coastal adaptation.

The model is validated through a phased readiness → piloting → validation → scaling process, with a defined pathway for replication across additional coastal landscapes and productive systems in Cuba and in other coastal developing countries and small island developing States (SIDS).

Expected scale

The project is expected to restore or improve management of priority coastal ecosystems, strengthen a defined set of UEB-linked aquaculture and fisheries production sites, and benefit coastal communities and aquaculture- and fisheries-dependent households, with women and youth prioritized. It will also strengthen the capacity of national and provincial institutions and practitioners. Expected adaptation outcomes include

reductions in climate-related exposure and in aquaculture/fisheries mortality, production loss, downtime and income-loss risk at targeted sites.

All scale and outcome figures are indicative (500 ha of coastal ecosystems, 5–8 UEBs, 3,000–5,000 people / 600–1,000 households, 10–15% loss reduction) and will be defined and confirmed against site-specific baselines established during the PFG / full-proposal stage, and verified through the project's own adaptation-MRV system.

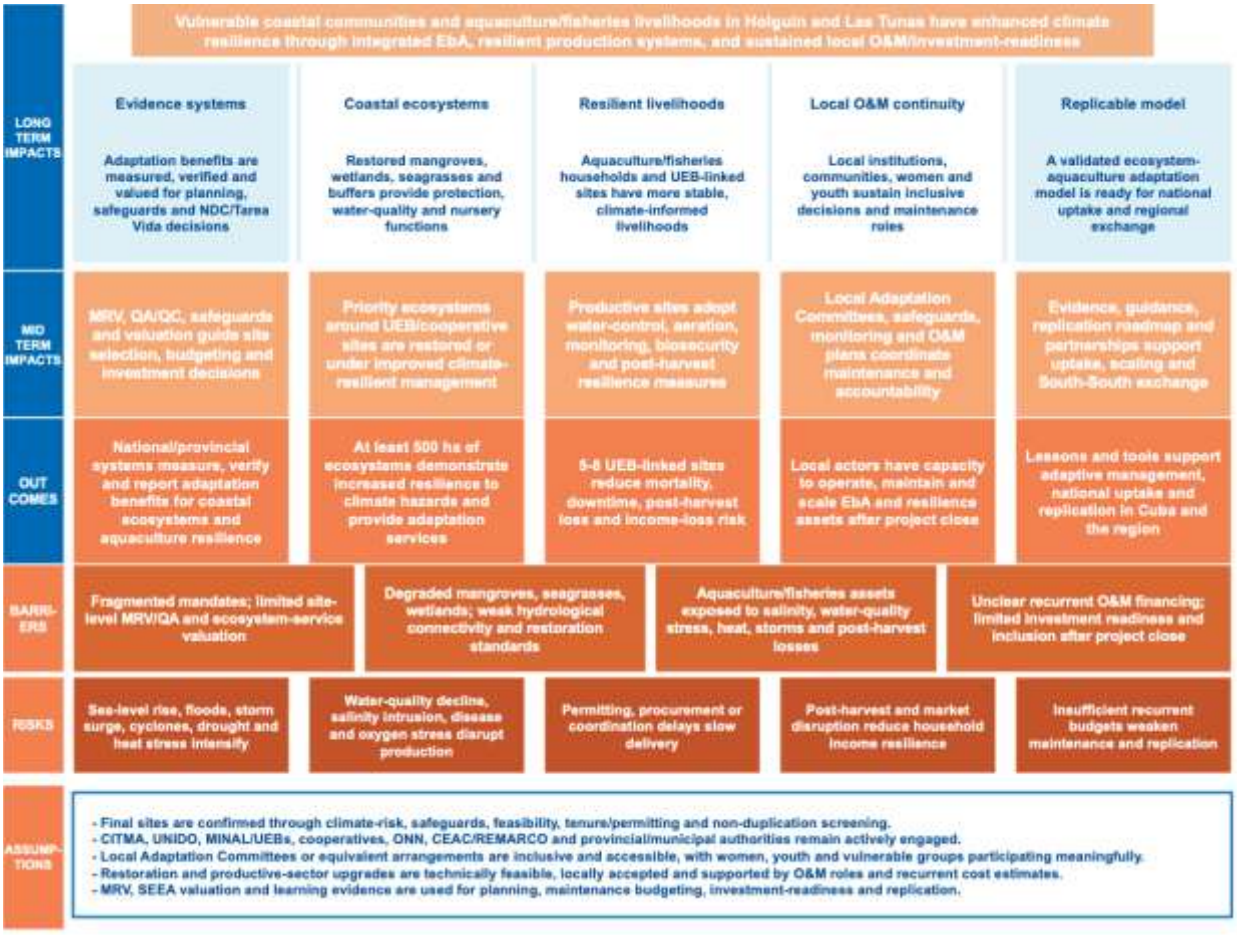


Figure 5 – Theory of Change

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's innovation strategy is to roll out, in the Cuban context, an integrated approach that makes the adaptation value of coastal ecosystems measurable, verifiable and investment ready. The adaptation services that mangroves, seagrasses and coastal wetlands provide to aquaculture and fishing communities – wave attenuation, salinity regulation, water-quality improvement and nursery functions – are measured under a national adaptation MRV system, valued through SEEA Ecosystem Accounting, and translated into costed maintenance and investment-readiness arrangements integrated into national and local planning. The ecosystem restoration and aquaculture/fisheries upgrades financed by the project are demonstrated adaptation measures; the innovation lies in the integrated system that measures their benefits, expresses those benefits as an economic value in national accounts, and sustains them through maintainable and investment-ready arrangements beyond the grant period. The remaining elements of this approach are set out below.

Innovation gap. At present, the adaptation services of coastal mangrove, seagrass and wetland systems in Holguín and Las Tunas are not measured under a standardized MRV protocol or expressed as a monetary value in national ecosystem accounts, and that value is largely absent from public investment planning, maintenance budgeting and climate-finance pipelines.[30] From this baseline, the project will place at least 500 ha of priority coastal ecosystems and 5–8 UEB-linked productive sites under verified, valued and planning-integrated adaptation management, establishing the evidence base required to plan their continued maintenance and financing.

Valuation of ecosystem services. Coastal ecosystems function as cost-effective natural infrastructure. In the World Bank's The Changing Wealth of Nations 2021, mangroves were recognized as coastal-protection assets, with their global flood-protection service valued at over USD 547 billion in 2018[31]; complementary global analysis finds that restoring or conserving mangroves is frequently more cost-effective than constructing equivalent engineered breakwaters for the same level of wave attenuation[32]. Within SEEA Ecosystem Accounting, this protective role is captured in the ecosystem-services accounts: the coastal-protection service is typically valued using the expected (avoided) damage-cost method, which estimates the value of damage that would occur in the absence of the ecosystem, while changes in the underlying ecosystem assets are recorded in the ecosystem extent, condition and monetary asset accounts[33]. SEEA therefore measures both the natural-capital stock and the flow of risk-reduction services it provides. Cuba's own experience underlines the contrast in whole-of-life cost: the Southern Dike, a grey-infrastructure levee built in 1991 to halt saline intrusion, carried recurrent maintenance costs of USD 1.5 million every three years plus a once-off USD 15 million and ultimately degraded adjacent mangroves, while the GCF-financed "Mi Costa" project (building on the Adaptation Fund-financed "Manglar Vivo") is explicitly designed around "cost-effective ecosystem-based approaches" for coastal protection[34].

The individual components are internationally demonstrated, which reduces delivery risk. SEEA Ecosystem Accounting was adopted as an international statistical standard by the United Nations Statistical Commission in March 2021 and has since been used to inform policy in more than 34 countries[35]. Under the EU-funded NCAVES programme – implemented by the United Nations Statistics Division, the United Nations Environment Programme and the Secretariat of the Convention on Biological Diversity – Brazil, China, India, Mexico and South Africa piloted SEEA Ecosystem Accounting, in several cases bringing the value of coastal and marine ecosystems into national accounts and policy planning[36]; this is the same function the project will localize in Cuba. Ecosystem-based adaptation, climate-resilient aquaculture and last-mile early-warning measures are likewise established practices, supported by recognized frameworks including the IUCN Global Standard for Nature-based Solutions, the FEBA criteria for EbA, ISO 14090/14091 and the IPCC Wetlands Supplement.

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[30] UNFCCC (2022), Climate Finance Access and Mobilization Strategy for Cuba (2022–2030) https://unfccc.int/sites/default/files/resource/UNFCCC_NBF_SD_Cuba_2022.pdf

[31] World Bank (2021), The Changing Wealth of Nations 2021: Managing Assets for the Future, World Bank, Washington, DC. https://www.worldbank.org/en/publication/changing-wealth-of-nations

[32] Menéndez, P., Losada, I.J., Torres-Ortega, S., Narayan, S. and Beck, M.W. (2020), 'The Global Flood Protection Benefits of Mangroves', https://www.nature.com/articles/s41598-020-61136-6 ; Temmerman, S. et al. (2013), 'Ecosystem-based coastal defence in the face of global change', Nature

[33] Sánchez Colón, S. (2020), Pilot Testing the SEEA-EEA Framework in Mexico: Coastal Protection by Mangrove Ecosystems, UN Statistics Division (NCAVES); Australian Bureau of Statistics (2022), National Ecosystem Accounts: Experimental Estimates Methodology, 2020-21. https://www.abs.gov.au/methodologies/national-ecosystem-accounts-experimental-estimates-methodology/2020-21

[34] Green Climate Fund / UNDP, FP157, Coastal Resilience to Climate Change in Cuba through Ecosystem-Based Adaptation ('Mi Costa'). https://www.adaptation-undp.org/projects/coastal-resilience-climate-change-cuba-through-ecosystem-based-adaptation-mi-costa; UNDP/GCF (2021). https://www.adaptation-undp.org/cuba-accesses-us239-million-grant-green-climate-fund-coastal-resilience-project

[35] United Nations et al. (2021), System of Environmental-Economic Accounting (SEEA EA)https://seea.un.org/ecosystem-accounting

[36] UNSD, UNEP and CBD Secretariat (2017–2021), Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES) Project. https://seea.un.org/content/natural-capital-accounting-and-valuation-ecosystem-services

The innovation is the integration, deployed in a new context. The Adaptation Fund understands innovation as "the process of translating an idea or invention into a valuable good or service at an economical cost,"[37] and its Large Innovation window is intended "to roll out proven solutions in new countries and regions or to scale up innovations already demonstrated to work."[38] Deploying these demonstrated practices in a context where they have not previously been combined is precisely that logic. The element not previously applied to coastal and aquaculture adaptation in Cuba is the assembly of these demonstrated components into a single, nationally anchored model that measures coastal adaptation benefits, values them in national ecosystem accounts, embeds them in municipal and provincial planning, and links them to costed operation-and-maintenance and investment-readiness arrangements for aquaculture-linked coastal landscapes. It is this integration, rather than any single component, that constitutes the innovation, and that distinguishes the model from a conventional ecosystem-restoration and aquaculture-resilience intervention.

Contribution to the Innovation Facility's expected results (ER). Through this approach the project contributes directly to the two expected results identified for large innovation projects under the Fund's Medium-Term Strategy: ER1 – Successful innovations rolled out, by introducing and validating the integrated model in Holguín and Las Tunas, and ER2 – Viable innovations scaled up, through the quantified evidence base, MRV and ecosystem-service valuation outputs, knowledge products and replication roadmap that prepare the validated model for scaling to other Cuban coastal landscapes and other small island developing States[39].

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 applies a phased roll-out approach to test, validate and scale an integrated adaptation innovation model combining ecosystem-based adaptation (EbA), climate-resilient aquaculture/fisheries measures, adaptation MRV, quality infrastructure, ecosystem-service valuation, safeguards, local governance, O&M planning and investment-readiness.

Phase 1 - Readiness: Establish adaptation MRV protocols, digital and local monitoring tools, baseline assessments, site-selection criteria, safeguards procedures, local coordination arrangements, O&M planning tools and investment-readiness requirements.

Phase 2 - Piloting: Implement ecosystem restoration and improved management of at least 500 ha of mangroves, seagrasses, wetlands and associated buffer ecosystems, together with climate-resilient aquaculture/fisheries upgrades across 5-8 UEB-linked productive sites in Holguín and Las Tunas.

Phase 3 - Validation and learning: Assess adaptation outcomes, MRV performance, governance effectiveness, safeguards performance, gender/youth participation, O&M needs and quantified climate-risk reduction benefits through technical monitoring, participatory tools, social audits and learning reviews.

Phase 4 - Scaling: Integrate the validated model into Tarea Vida, aquaculture-sector planning, municipal/provincial adaptation planning and the NDC adaptation agenda, supported by practical guidance, a replication roadmap, investment-ready adaptation concepts and South-South knowledge exchange.
The project will demonstrate, document and package a replicable model for aquaculture-linked coastal adaptation that can be scaled to other vulnerable coastal landscapes in Cuba and shared with other SIDS and coastal developing countries.

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[37] Adaptation Fund (2017), Medium-Term Strategy 2018–2022, p.19, n.9. https://www.adaptation-fund.org/wp-content/uploads/2018/03/Medium-Term-Strategy-2018-2022-final-03.01-1.pdf

[38] Adaptation Fund, Programme on Innovation: Large Grants for Innovation (Innovation Facility). https://www.adaptation-fund.org/apply-funding/innovation-grants/

[39] Adaptation Fund (2017), Medium-Term Strategy 2018–2022, p.20 (Strategic Focus 2: Innovation, Expected Results). https://www.adaptation-fund.org/wp-content/uploads/2018/03/Medium-Term-Strategy-2018-2022-final-03.01-1.pdf

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 3,000-5,000 individuals, or 600-1,000 households, across 5-8 UEB-linked aquaculture/fisheries productive sites and associated coastal communities in Holguín and Las Tunas provinces. Beneficiaries will include cooperative members, fishers, aquaculture workers, women engaged in processing and ecosystem stewardship, youth, and vulnerable coastal households. Key benefits include:

Economic: Reduced climate-related production losses, downtime and income-loss risk through climate-resilient aquaculture/fisheries upgrades, improved water-quality and salinity monitoring, post-harvest loss-reduction measures, and employment or paid participation in ecosystem restoration, monitoring and maintenance activities. The project will also prepare investment-ready concepts and O&M plans to support future maintenance and scale-up after the grant period.

Social: Strengthened local governance through inclusive decision-making, Local Adaptation Committees or equivalent coordination arrangements, grievance feedback, social audits and participation targets for women and youth. Training will focus on ecosystem restoration, adaptation MRV, local monitoring, climate-resilient aquaculture/fisheries practices, safeguards and O&M planning.

Environmental: Restoration, rehabilitation or improved management of at least 500 ha of priority mangroves, seagrasses, coastal wetlands and associated buffer ecosystems, delivering shoreline stabilization, water-quality improvement, salinity regulation, sediment stabilization, nursery-habitat benefits and improved ecosystem condition. Complementary GHG/carbon-stock co-benefits may be documented, where relevant, but the project's core environmental benefits are adaptation, coastal protection, ecosystem health and aquaculture/fisheries resilience.

Benefits will primarily target vulnerable aquaculture/fisheries and coastal communities. At concept stage, at least 40-50% of direct beneficiaries are expected/targeted to be women and approximately 30% youth, subject to validation during the PFG/full proposal stage. Women and youth will be prioritized for training, local monitoring, restoration activities, post-harvest loss-reduction measures and participation in local governance arrangements. The estimated number and profile of target beneficiaries will be confirmed during full proposal preparation through site-specific consultations, gender analysis and beneficiary mapping.

At full proposal stage, beneficiary mapping will include area-specific preliminary data on the presence and participation of marginalized or vulnerable groups in the selected Holguín and Las Tunas sites, including women-headed households, youth, low-income households, Afro-descendant populations, where identifiable, through appropriate national or local data and consultations, and any communities with indigenous heritage identified through screening.

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 Environmental and Social Policy, reflecting site-specific, limited and reversible environmental and social risks that can be managed through screening, mitigation and monitoring. Key preliminary risks include:

Ecosystem disturbance during restoration or small-scale works: Potential temporary sediment disturbance, habitat disturbance or water-quality impacts will be mitigated through site screening, use of native species, seasonal timing, avoidance of critical habitats where required, supervision by environmental authorities and ecosystem-condition monitoring.

Access and equity risks: Potential exclusion of women, youth, low-income households, remote communities or smaller cooperatives will be mitigated through transparent eligibility criteria, participatory planning, grievance mechanisms, social audits, outreach to vulnerable groups and gender/youth participation targets.

Labour and occupational health and safety risks: Community restoration works and small infrastructure activities will follow national labour requirements, UNIDO safeguards procedures and appropriate occupational health and safety measures, including training and protective equipment.

Gender risks: Unequal participation, time burdens and limited access to training or decision-making will be addressed through a Gender Action Plan, sex-disaggregated indicators, gender-responsive consultation methods, targeted training and women's representation in local coordination arrangements.

Climate risk to project investments: Hurricanes, storm surge, sea-level rise, drought and extreme rainfall may damage restored ecosystems or aquaculture/fisheries assets before benefits are fully realized. Mitigation will include climate-risk screening, climate-resilient design, diversified site selection, maintenance protocols, contingency planning and adaptive management.

Safeguard Instruments and Stakeholder Engagement

During the PFG/full proposal phase, the following instruments and processes will be developed and budgeted:

An Environmental and Social Management Framework (ESMF), including an exclusion list, screening procedures, risk categorization, roles and responsibilities, mitigation requirements, monitoring procedures and grievance-redress arrangements for site-specific activities not yet fully defined at concept stage.

Site-specific Environmental and Social Management Plans or ESMP provisions, as required, for ecosystem restoration, aquaculture/fisheries upgrades, post-harvest measures and any small-scale infrastructure.

A Gender Analysis and Gender Action Plan, aligned with the Adaptation Fund Gender Policy, with budgeted actions, sex-disaggregated indicators and gender-responsive consultation protocols.

Community-level stakeholder engagement plans prioritizing women, youth, vulnerable households, cooperatives and affected coastal communities, applying FPIC principles where relevant and consistent with national context and Adaptation Fund requirements.

A grievance mechanism with gender-sensitive and locally accessible entry points, response procedures, documentation requirements and monitoring of resolution outcomes.

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.

The proposed project is cost-effective because it concentrates Adaptation Fund resources on integrated interventions that reduce climate risk to coastal ecosystems and productive livelihoods at the same time, while avoiding parallel delivery systems or speculative financing dependencies. Cost-effectiveness is supported by the following design features:

Cost-Effectiveness

Adaptation value per dollar invested:
The project prioritizes ecosystem-based adaptation and climate-resilient aquaculture/fisheries measures, which can deliver multiple resilience benefits from the same investment. Restoration and improved management of mangroves, seagrasses, wetlands and associated buffer ecosystems will support storm-surge buffering, erosion control, salinity regulation, water-quality improvement, nursery functions and livelihood resilience. Delivering these benefits through one integrated landscape approach is more efficient than financing separate hard-infrastructure, water-treatment, coastal-protection and livelihood-support interventions.

Avoided climate-related losses and productivity stabilization:
By reducing coastal exposure, improving water-quality and salinity management, and strengthening aquaculture/fisheries operations, the project is expected to reduce climate-related mortality, production losses, downtime and income-loss risk in targeted sites. These avoided losses increase the economic efficiency of the AF investment, particularly for vulnerable coastal households and cooperatives with limited capacity to absorb repeated climate shocks.

Use of existing national capacities:
The project builds on existing Cuban institutional, scientific and local capacities, including CITMA, provincial authorities, CEAC, ONN, UEBs and local coordination arrangements, rather than creating parallel systems. This reduces implementation costs and supports institutional continuity and enables that the project tools and practices will be maintained after grant closure. The adaptation MRV, ecosystem-service valuation and O&M planning tools will also help prioritize future maintenance and scale-up investments based on evidence of risk reduction, ecosystem condition and community benefit.

Targeted and integrated delivery:
Cost-effectiveness is strengthened by focusing interventions on 5-8 UEB-linked productive sites and at least 500 ha of priority ecosystems selected through climate-risk, vulnerability, safeguards, feasibility, tenure/permitting and non-duplication screening. Combining ecosystem restoration, aquaculture/fisheries resilience upgrades, post-harvest loss-reduction measures, adaptation MRV and O&M planning in the same landscapes reduces duplication, concentrates benefits and improves the likelihood that restored ecosystems and productive assets will be maintained after project closure.

Sustainability and investment-readiness:
All core adaptation interventions are financed by the Adaptation Fund grant during implementation. Post-project cost-effectiveness will be supported through O&M plans, budget-entry points, ecosystem-service valuation and investment-ready adaptation concepts for future maintenance and scale-up. Any future ecosystem-service, public, cooperative, concessional, private or climate-finance opportunities would be treated as complementary sustainability pathways, not as a condition for delivering the project's grant-period adaptation outcomes.

Knowledge spillovers and replication:
Although this is a single-country project, it will generate transferable public goods for other Cuban coastal landscapes and for Caribbean SIDS facing similar coastal, aquaculture and ecosystem-management risks. Practical guidance, MRV protocols, valuation tools, safeguards lessons, O&M templates and a replication roadmap will reduce future project-preparation costs and support more efficient scaling of aquaculture-linked ecosystem-based adaptation in the Cuban and regional context.

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.

Table 2: Alignment with national/sub-national strategies

National and sub-national strategies	Main objective of strategy	Project alignment with strategy
Plan de Estado para el Enfrentamiento al Cambio Climático en la República de Cuba, "Tarea Vida" (approved 2017; updated through Ley 150/2023, Decreto 86/2023 and CND 3.0, February 2025)	Protect human life and quality of life under a changing climate, prioritizing vulnerable coastal zones, water security, ecosystem recovery and risk-informed territorial decisions.	The project directly contributes to Tarea Vida by advancing coastal ecosystem-based adaptation, restoring mangroves and associated ecosystems, strengthening water-quality and salinity monitoring, and supporting resilient aquaculture and fisheries livelihoods.
Provincial and municipal Tarea Vida action plans and development planning in Holguín and Las Tunas (2017-2030+)	Translate national climate priorities into territorial planning, local risk management, community participation and public investment priorities in the target provinces and municipalities.	The project supports sub-national implementation by applying climate-risk screening to restoration and aquaculture sites, coordinating with provincial/municipal authorities and embedding O&M and beneficiary monitoring in local implementation arrangements.
Contribución Nacionalmente Determinada 3.0 de la República de Cuba (February 2025)	Set Cuba's updated climate contribution for 2031-2035, reaffirming adaptation as the national priority and strengthening transparency, reporting and implementation planning.	The project supports the CND 3.0 through adaptation MRV, ecosystem-condition monitoring, QA/QC protocols and investment-ready evidence for coastal ecosystems and aquaculture/fisheries resilience.
Estrategia Ambiental Nacional 2021-2025 and national environmental policy framework	Guide the protection of natural resources, biodiversity, ecosystem services and environmental quality through CITMA's environmental management framework.	The project operationalizes this framework through ecosystem restoration, biodiversity safeguards, water-quality monitoring, environmental screening, ecosystem-service valuation and community monitoring.
Ley No. 150 - Ley del Sistema de los Recursos Naturales y el Medio Ambiente and Decreto 86 del Enfrentamiento al Cambio Climático	Establish Cuba's environmental and climate-change governance framework, including resilient and low-emission development, adaptation planning and institutional coordination.	The project operationalizes Cuba's environmental and climate-governance framework through ecosystem restoration, safeguards, biodiversity protection, water-quality monitoring, environmental screening, ecosystem-service valuation and community monitoring.
Programa Nacional sobre la Diversidad Biológica con mirada al 2030	Guide biodiversity conservation, ecosystem restoration and sustainable use of biological resources through 2030.	The project supports biodiversity and ecosystem-service objectives through mangrove, seagrass, wetland and buffer-ecosystem restoration, ecosystem-condition/habitat-condition monitoring under the adaptation MRV, and biodiversity indicators in site-specific ESMPs.

National and sub-national strategies	Main objective of strategy	Project alignment with strategy
Plan Nacional de Desarrollo Económico y Social hasta 2030, including Decreto Presidencial 261and Resolución 57/2022	Guide Cuba's development to 2030 through strategic axes that integrate environmental sustainability, food security, gender equality, reduced inequalities and the 2030 Agenda.	The project supports the PNDES by linking coastal adaptation with local livelihoods, food security, innovation, territorial planning and adaptation investment readiness.
Ley No. 148/2022 - Ley de Soberanía Alimentaria y Seguridad Alimentaria y Nutricional and Decreto No. 67/2022 - Reglamento de la Ley de Soberanía Alimentaria y Seguridad Alimentaria y Nutricional	Strengthen local food systems, safe and nutritious food access, resilient supply chains and food sovereignty.	The project supports food sovereignty and food-security priorities by reducing climate risks to aquaculture and fisheries production, improving post-harvest resilience, and strengthening cooperatives and UEB-linked productive sites.
Ley No. 129/2019 - Ley de Pesca; Decreto No. 1/2019 - Reglamento de la Ley No. 129 "Ley de Pesca"; and GCF/FAO fisheries readiness support	Regulate fisheries and aquaculture resources and support sector planning for resilient, sustainable fisheries and aquaculture development.	The project complements fisheries and aquaculture sector priorities by piloting practical EbA, adaptation MRV, water-quality monitoring and investment-readiness evidence for resilient aquaculture and fisheries livelihoods.
Ley No. 145 - Ordenamiento Territorial y Urbano y Gestión del Suelo; Decreto No. 68 - Reglamento de la Ley No. 145; Decreto-Ley 77/2023 "De Costas"; and Decreto 97/2023 Reglamento del Decreto-Ley 77 "De Costas"	Guide territorial, urban, soil and coastal planning, including regulated land/coastal use and risk-sensitive development.	The project supports provincial and municipal planning in Holguin and Las Tunas through climate-risk screening, distinct restoration areas and productive sites, local coordination, O&M planning and beneficiary-level monitoring

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:

Table 2: Compliance with Cuban national technical standards and legal frameworks

Policy / Standard	Purpose of the Policy	Relevance to the project
Ley No. 150 - Ley del Sistema de los Recursos Naturales y el Medio Ambiente; Resolución No. 132/2009 - Reglamento del proceso de evaluación de impacto ambiental; Resolución No. 103/2008 - Reglamento de la Inspección Estatal de la Actividad Reguladora Ambiental	Establish Cuba's environmental management, EIA and regulatory inspection framework.	Outputs 1, 2A, 2B and 3. Status: concept-stage screening only. Compliance steps: CITMA screening before works, EIA or environmental authorization where required, and permit conditions integrated into designs, contracts, ESMP and supervision.

Policy / Standard	Purpose of the Policy	Relevance to the project
Decreto-Ley 77/2023 "De Costas" and Decreto 97/2023 Reglamento del Decreto-Ley 77 "De Costas"	Regulate the use, protection and management of coastal zones.	Outputs 2A, 2B and 3. Status: final sites to be confirmed. Compliance steps: coastal-zone screening, competent-authority clearances, climate-resilient siting/design and O&M duties before implementation.
Decreto-Ley No. 201 - Sistema Nacional de Areas Protegidas and Ley No. 155/2022 - Ley General de Protección al Patrimonio Cultural y al Patrimonio Natural	Protect protected areas, natural heritage, ecosystems, habitats and species.	Outputs 1, 2A and 3. Status: protected-area context to be verified during full proposal design. Compliance steps: protected-area eligibility screening, clearances where relevant, native restoration protocols, ecosystem-condition/habitat-condition monitoring under the adaptation MRV, and biodiversity indicators in site-specific ESMPs.
Ley No. 129/2019 - Ley de Pesca; Decreto No. 1/2019 - Reglamento de la Ley No. 129 "Ley de Pesca"; Resolución No. 17/2022 - Procedimiento para el otorgamiento de autorizaciones de Pesca; Resolución No. 19/2020; Resolución No. 68/1999	Regulate fisheries, aquaculture authorizations, aquaculture water bodies and sanitary conditions for aquatic cultivation.	Output 2B, with links to outputs 1, 3 and 4. Status: beneficiaries, sites and technologies are indicative. Compliance steps: verify licenses, aquaculture/site authorizations, sanitary and biosecurity conditions before financing productive or cold-chain measures.
Ley No. 124 - Ley de las Aguas Terrestres; Decreto-Ley No. 364 - Ley de la Misión del Instituto Nacional de Recursos Hidráulicos; Resolución No. 223/2014 - Reglamento del control administrativo de fuentes contaminantes generadoras de residuales líquidos y sólidos	Govern water resources, INRH oversight and control of liquid/solid residual pollution sources.	Outputs 1, 2A and 2B. Status: water-quality and salinity baselines to be completed. Compliance steps: confirm INRH/CITMA requirements, monitor water quality and salinity, apply effluent controls and use CEAC/technical QA/QC.
Ley No. 148/2022; Decreto No. 67/2022; Decreto No. 22/2020; Ley No. 41 - Ley de la Salud Pública; Decreto No. 139; Resolución No. 71/2022 - Reglamento Técnico de Envases y Embalajes	Establish food sovereignty, food production, public-health, packaging and sanitary requirements.	Output 2B. Status: post-harvest/cold-chain measures to be selected. Compliance steps: verify sanitary requirements, include food-safety and packaging specifications, train operators and obtain inspections or approvals before use.
Ley No. 145; Decreto No. 68; Resolución No. 810/2000 - Protección del medio ambiente en la construcción; Resolución No. 757/1999 - Requisitos técnicos para estructuras de hormigón armado sometidas directamente a la acción del ambiente marino; Resolución No. 159/2014 - Reglamento de seguridad eléctrica	Govern land-use planning, construction environmental controls, marine-exposed reinforced concrete and electrical safety.	Outputs 2A, 2B and 3. Status: no final engineering designs approved at concept stage. Compliance steps: technical design review, land-use/construction clearances, marine/coastal durability checks, electrical/renewable-energy safety checks and assigned O&M responsibilities.
Ley No. 116 - Código de Trabajo	Establishes labour rights and employer obligations, including safe working conditions.	All outputs, especially 2A and 2B. Status: contractor and field-worker arrangements to be finalized. Compliance steps: OHS plan, PPE and training, contractor labour clauses, incident reporting and UNIDO/CITMA supervision.

Policy / Standard	Purpose of the Policy	Relevance to the project
Oficina Nacional de Normalización (NC), Cuba's national standardization, certification and metrology body; relevant ISO/IPCC reference frameworks to be confirmed with ONN/CITMA	**Institutional relevance:** Provides the quality-infrastructure anchor for standardization, metrology, certification, adaptation risk, MRV, QA/QC and data traceability.	Output 1, with links to 2A, 3 and 4. Status: national recognition of international MRV/ISO/IPCC references to be confirmed with ONN/CITMA. Compliance steps: ONN/CEAC technical review, SOPs, equipment checks, data traceability

Compliance with the Adaptation Fund ESP will be operationalized through the project's Environmental and Social Management Plan. The ESMP will integrate AF ESP requirements with Cuban national technical standards, including screening, risk mitigation, monitoring, consultation, grievance management, supervision and adaptive management measures. CITMA and the competent sectoral authorities will verify compliance through permitting, inspections, technical supervision and enforcement mechanisms throughout implementation. International MRV, adaptation and ecosystem-accounting references will not be treated as substitutes for Cuban legal requirements. Where ISO, IPCC, SEEA or other international references are used, ONN/CITMA will confirm their recognition or use as technical reference methods, while Cuban EIA, coastal-zone, aquaculture, water, food-safety, construction, electrical and occupational-health-and-safety requirements will remain mandatory for all relevant outputs.

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

There is no duplication with other funding sources. The proposed project is designed to be complementary and additional to ongoing and planned coastal resilience, ecosystem-based adaptation, food security, biodiversity and climate finance initiatives in Cuba. It responds to a specific gap not covered by existing investments: the establishment of a national adaptation MRV, quality-infrastructure and ecosystem-service valuation framework; the testing of aquaculture-linked mangrove, seagrass, wetland and buffer-ecosystem restoration models in Holguín and Las Tunas; and the preparation of locally governed O&M continuity and adaptation investment-readiness processes to support future maintenance and scale-up.

The project will screen all proposed sites during the full proposal stage against ongoing initiatives to avoid overlap in restoration areas, beneficiary groups and financing streams. Site selection will be coordinated through CITMA, provincial authorities, sector institutions and project implementation units of relevant programmes. Where another initiative is active in the same province or municipality, this project will either select distinct restoration units and beneficiary groups or focus only on complementary adaptation MRV, standards, O&M continuity, investment-readiness, finance and knowledge functions.

Table 3: Project baseline for synergies

Project title	Opportunities for synergies
Coastal Resilience to Climate Change in Cuba through Ecosystem-Based Adaptation (Mi Costa) (GCF, UNDP – FP157)	Scope and budget: GCF-approved project (FP157), approved March 2021 with implementation to an estimated completion of September 2029; US$23.9 million GCF grant with US$20.3 million Government of Cuba co-financing, applying ecosystem-based adaptation along Cuba's southern coast across 24 municipalities. Description: large-scale mangrove, swamp-forest and wetland restoration, hydrological reconnection, community training and early-warning measures. Complementarity and lessons learned: strong complementarities around ecosystem-based adaptation, mangrove and wetland restoration and coastal risk reduction; the project will draw on Mi Costa's experience in restoration sequencing, hydrological reconnection and maintenance planning. Overlap and non-duplication: Mi Costa operates on the southern coast, distinct from the proposed Holguín and Las Tunas aquaculture-linked sites, so the link is

	methodological; the proposed project adds adaptation MRV, QA/QC, ecosystem-service valuation, O&M continuity and investment-readiness, and will coordinate through CITMA without financing the same sites, investments or beneficiaries.
Reduction of Vulnerability to Coastal Flooding through Ecosystem-Based Adaptation in southern Artemisa and Mayabeque (Manglar Vivo) (AF, UNDP – completed)	Scope and budget: completed Adaptation Fund project (2014–2019), AF budget US$6,067,320, implemented by UNDP and executed by CITMA and MINAGRI, covering an 84 km coastline between Punta Sucia and Punta Mora in Artemisa and Mayabeque. Description: mangrove and associated coastal ecosystem restoration to reduce coastal flooding, saline intrusion and erosion. Complementarity and lessons learned: strong complementarities around mangrove rehabilitation, coastal flood-risk reduction and community stewardship; Manglar Vivo provides a national lesson base for technical design, safeguards, monitoring and maintenance planning. Overlap and non-duplication: no geographic overlap with Holguín or Las Tunas; the proposed project applies these lessons to an aquaculture-linked restoration, adaptation-MRV, valuation and O&M investment-readiness model not previously implemented, with no refinancing of completed sites, assets, beneficiaries or activities.
Strengthening the Adaptive Capacity of Coastal Communities of Cuba and Panama to Climate Change through Binational Exchange (AF, IFAD)	Scope and budget: regional Adaptation Fund project approved by the AF Board on 17 April 2025; US$14 million, implemented by IFAD and executed by FAO, CITMA/AMA (Cuba) and MiAmbiente (Panama), covering nine coastal municipalities across Cuba and Panama. Description: strengthening adaptive capacity, local food security, disaster-risk management and binational exchange of best practices. Complementarity and lessons learned: strong synergies around coastal-community vulnerability criteria, gender-responsive consultation, food-security resilience and South-South learning, which will inform project targeting and design. Overlap and non-duplication: the proposed project adds distinct aquaculture/fisheries-linked sites and adaptation MRV, valuation, O&M continuity and investment-readiness; where both operate in the same municipality it will select distinct sites and beneficiary groups and coordinate only on learning, vulnerability data and best-practice exchange.
Increased climate resilience of rural households and communities through rehabilitation of production landscapes in Cuba (IRES) (GCF, FAO – FP126)	Scope and budget: GCF-approved project (FP126, GCF Board March 2020) under implementation to an estimated completion of June 2027; US$38.2 million GCF grant with US$81.7 million Government of Cuba co-financing (about US$119 million total), executed by MINAG and FAO across seven vulnerable municipalities including Jobabo, Amancio and Colombia in Las Tunas. Description: agroforestry, silvopastoral systems, reforestation and assisted natural regeneration on inland production landscapes. Complementarity and lessons learned: opportunities around climate-risk information, drought resilience, food-security monitoring, producer extension and landscape-restoration lessons. Overlap and non-duplication: IRES focuses on inland agricultural landscapes; the proposed project focuses on coastal and aquaculture/fisheries-linked adaptation and will exclude IRES-supported inland farms, producer groups and extension packages, coordinating with FAO, CITMA, MINAG/MINAL and provincial authorities to keep investments spatially and programmatically distinct.
Development of a Strategic Framework for a Resilient and Low-Carbon Fisheries Sector in Cuba (GCF Readiness, FAO)	Scope: GCF readiness support for Cuba (document published February 2025) to strengthen the fisheries sector's climate resilience and low-carbon development and to prepare and advance potential GCF projects, including options for aquaculture and mariculture development (the published page does not state the grant amount, to be confirmed during PFG). Description: strategic planning, institutional capacity and pipeline development for a climate-resilient, low-carbon fisheries sector. Complementarity and lessons learned: strong complementarities around fisheries and aquaculture planning, climate-resilience criteria and sectoral coordination; readiness outputs will help align MRV indicators, resilience criteria and investment-readiness studies with MINAL, GEPESCA, CIP and CITMA priorities. Overlap and non-duplication: this is upstream planning and does not finance site-level restoration, aquaculture resilience measures, adaptation MRV, valuation or O&M; the proposed project translates approved sector guidance into distinct site-level pilots in Holguín and Las Tunas.

Blue and Green Islands Integrated Programme (BGI-IP) (GEF, UNDP)	Scope and budget: US$135.6 million GEF-funded programme led by UNDP with UNEP, FAO, the World Bank, IUCN and WWF, supporting 15 Small Island Developing States including Cuba over the 2024–2034 Decade of Action; regional inception workshops were held in November 2025 (Cuba country-level activities are being defined). Description: scaling nature-based solutions to reduce ecosystem degradation across the food, tourism and urban sectors. Complementarity and lessons learned: opportunities around nature-positive development, ecosystem valuation and integrated coastal-marine management that can inform site screening and safeguards. Overlap and non-duplication: the proposed project adds the national adaptation MRV, quality-infrastructure and ecosystem-service valuation framework and the locally governed O&M continuity and investment-readiness process this programme does not establish; site selection will be coordinated through CITMA to avoid overlap in restoration areas and beneficiary groups.
Euroclima – EU flagship climate programme for Latin America and the Caribbean (EU)	Scope and budget: the European Union's flagship climate programme for 33 Latin American and Caribbean countries including Cuba, with more than €265 million approved since 2010, implemented by agencies including AECID, ECLAC, FIIAPP and UNEP. Description: support to climate governance, mitigation, adaptation, resilience, climate investment and biodiversity, including resilient food systems and sustainable resource management. Complementarity and lessons learned: opportunities around climate-governance support and policy and institutional experience that can inform institutional arrangements. Overlap and non-duplication: the proposed project delivers the site-level aquaculture-linked ecosystem restoration, adaptation MRV and investment-readiness functions not covered by Euroclima, coordinating on technical standards and knowledge products without duplication of investments or beneficiaries.
Increasing resilience of ecosystems and communities through EbA in key connected areas of the Caribbean Biological Corridor (CBF EbA Facility)	Scope: Caribbean Biodiversity Fund EbA Facility project (Facility funded by Germany's IKI through KfW; medium grants US$250,000–1 million, large grants up to US$2 million) in Cuba and Haiti, working in the provinces of Holguín and Guantánamo between Yamanigüey and Nibujón, including wetlands along Alejandro de Humboldt National Park, and in northern Haiti. Description: reducing coastal flooding, sedimentation, warming and biodiversity loss through EbA and ecological connectivity. Complementarity and lessons learned: strong complementarities around EbA capacity-building, wetland restoration, protected-area coordination and community-based stewardship that will inform site design. Overlap and non-duplication: the proposed project focuses on distinct aquaculture/fisheries-linked productive sites and on ecosystem-service valuation, adaptation MRV, O&M continuity and investment-readiness; during PFG, candidate sites in Holguín will be screened with CITMA and protected-area partners so activities are in separate sites with different beneficiaries and workplans.
Applying nature-based solutions to increase coastal resilience and adaptation capacity in protected areas of Cuba (CBF EbA Facility)	Scope: Caribbean Biodiversity Fund EbA Facility project in Cuba applying nature-based solutions to strengthen coastal resilience and climate-change adaptation capacity in protected areas (specific protected-area sites and budget to be confirmed against the project record during PFG). Description: nature-based solutions, protected-area management and community capacity-building for coastal adaptation. Complementarity and lessons learned: opportunities around protected-area management, EbA planning, mangrove and coastal-vegetation restoration and biodiversity safeguards that will inform site screening where aquaculture-linked sites are near protected areas. Overlap and non-duplication: the proposed project will select distinct intervention sites and coordinate only on protocols, safeguards and monitoring, without financing the same protected-area planning, restoration works or management activities.
Community-based Coastal Remediation in the Insular Caribbean's Two Largest Nations: Cuba and the Dominican Republic (CBF EbA Facility)	Scope: Caribbean Biodiversity Fund EbA Facility project in Cuba and the Dominican Republic (Cuban sites and budget to be confirmed against the project record during PFG). Description: rehabilitating coastal ecosystems affected by storms and sea-level rise, restoring mangrove hydrology, replenishing coral reefs and addressing Sargassum influxes, with community-centric EbA plans. Complementarity and lessons learned: opportunities around community-based

	coastal remediation, mangrove restoration and local stewardship that will strengthen site design, community participation and safeguards. Overlap and non-duplication: the proposed project will prioritize separate coastal/aquaculture-linked sites and coordinate only on technical standards and knowledge exchange, without financing the same remediation sites, works, agreements or beneficiary groups.
Technical cooperation on coastal and marine environmental monitoring (REMARCO network) (IAEA)	Scope: IAEA technical cooperation and the Regional Network on Marine-Coastal Stressors in Latin America and the Caribbean (REMARCO), providing laboratory and QA/QC capacity, coastal ecosystem assessment, sediment and water-quality analysis, carbon-stock co-benefit measurement and regional scientific exchange. Complementarity and lessons learned: strong complementarities with the project's adaptation MRV and quality-infrastructure component; standardized scientific methods and laboratory protocols will improve credibility and traceability. Overlap and non-duplication: the proposed project uses these capacities as technical inputs to its MRV system and South-South cooperation rather than duplicating them, and does not finance the same regional activities.
Climate-Smart Aquaculture Systems and Resilient Blue-Food Industries (parallel UNIDO Adaptation Fund project, Cuba) (AF, UNIDO)	Scope: parallel UNIDO Adaptation Fund project (US$3.9 million; UNIDO as Implementing Entity, executed by UNIDO and Fundación Climática IRIS) in Holguín and Las Tunas, focused on climate-smart and regenerative aquaculture, climate-resilient post-harvest processing and value chains, food security and diversified livelihoods. Complementarity and synergy: strong complementarities around ecosystem-based adaptation, climate-resilient aquaculture and fisheries, food security and coastal-community resilience; the two projects target the same high-priority provinces and together address a substantial adaptation need, with the aquaculture project strengthening production, value chains and livelihoods and the present project strengthening coastal ecosystem restoration, adaptation MRV, ecosystem-service valuation, O&M continuity and investment-readiness. Lessons learned: the two projects will share consultation, baselines, safeguards and monitoring data. Areas of overlap and non-duplication: joint planning through CITMA, MINAL and provincial authorities will ensure separate sites, budgets, outputs and beneficiary records, so the two initiatives reinforce one another without duplication of investments or beneficiaries.

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

Component 4 will capture and disseminate lessons on adaptation-first MRV, ecosystem-service valuation, coastal ecosystem restoration, climate-resilient aquaculture, safeguards, local governance and O&M continuity.

Key activities will include:

- Establish a project learning system/hub linked to the MRV/data-management platform, local monitoring and results-based M&E.
- Produce practical knowledge products, including guidance notes, SOPs, training materials, policy briefs, case studies, datasets where appropriate, and adaptation investment-readiness and business case templates.
- Document lessons from Holguín and Las Tunas on restoration performance, aquaculture resilience, community monitoring, safeguards, gender/youth participation, social audits and maintenance planning.
- Use Local Adaptation Committee reviews, cooperative feedback sessions, participatory scorecards and social audits to capture bottom-up learning and inform adaptive management.
- Prepare a national replication and regional scale-up roadmap covering priority sites, institutional roles, indicative costs, maintenance needs, financing options and policy-integration pathways.

- Disseminate lessons through national workshops, technical trainings, South-South exchanges with Caribbean SIDS and REMARCO, and relevant UNIDO, Adaptation Fund and NDC Partnership channels.

At full proposal stage, quantitative targets will be included for knowledge products, trainings, learning events, participating institutions, trained stakeholders disaggregated by gender where feasible, and replication products delivered.

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.

Consultative process

At concept-note stage, project preparation has been informed by national technical scoping, policy and sector data review, and a series of presentations (6.11.2026 and 11.5.2026) and working exchanges with national counterparts and technical partners, whose feedback shaped the current design. Consultations during the Project Formulation Grant (PFG) phase will be used to inform, validate, refine or adjust this design.

Stakeholder consultations

Stakeholder consultations were undertaken during concept development to ensure country ownership, validate and complement the desk-based analysis, identify adaptation priorities and barriers, and strengthen the design of the proposed intervention. The process combined institutional consultations with community and productive-sector engagement in Holguín and Las Tunas.

The first stream focused on institutional stakeholders to ensure alignment with national priorities and ongoing initiatives. Between November 2025 and the present, two formal presentations and a series of technical working exchanges were held with CITMA, ONN, MINAL and technical and scientific institutions including IAEA technical experts, including a project workshop presentation on 13 May 2026 .These exchanges informed the project rationale, intervention logic and priority areas, and provided CITMA-led site identification and technical scoping (Annex I) of candidate UEB-linked areas in Las Tunas (UEB Guayabal, Sanros, Manatí, Puerto Padre) and Holguín (UEB Concha Azul and others), relevant national standards, and policy and programme evidence (Tarea Vida, national and sectoral plans, and lessons from prior ecosystem-restoration and climate-resilience initiatives in Cuba).

Preliminary CITMA-led site identification, technical scoping and consultations identified seven candidate Base Business Unit (Unidad Empresarial de Base, UEB)-linked areas (Annex 1): UEB Guayabal, UEB Sanros, UEB Manatí and UEB Puerto Padre in Las Tunas; and UEB Concha Azul, UEB Pescanipe and UEB Guajaca in Holguín. These candidate areas include oyster farms producing Crassostrea rhizophorae in Guayabal, Manatí and Puerto Padre; shrimp-farming sites in Sanros and Guajaca; and fisheries/oyster production areas in Concha Azul and Pescanipe linked to platform fisheries and inland fisheries, including species and resources such as crab, eel, clams and sea cucumber where relevant. The candidate areas are associated with rivers, bays and coastal water bodies including the Golfo de Guacanayabo, Río Yáquimo, Río Sevilla, Río Tana, Bahía de Manatí, Bahía de Puerto Padre, Bahía de Gibara, Bahía de Jururú, Bahía de Bariay, Bahía de Naranjo, Río Samá, Bahía de Banes, Bahía de Nipe, Bahía de Levisa, Río Sagua and Bahía de Sagua de Tánamo. The wider screening area covers approximately 214,519 ha and includes approximately 18,370 ha of mangroves, 1,665 ha of marsh vegetation and 86,036 ha of seagrass, as well as 13 associated protected areas. The project will not intervene across this full area. Final project interventions will be limited to at least 500 ha of priority mangrove, seagrass, wetland and buffer ecosystems and 5-8 UEB-linked productive sites, selected through climate-risk, safeguards, feasibility, tenure/permitting and non-duplication screening.

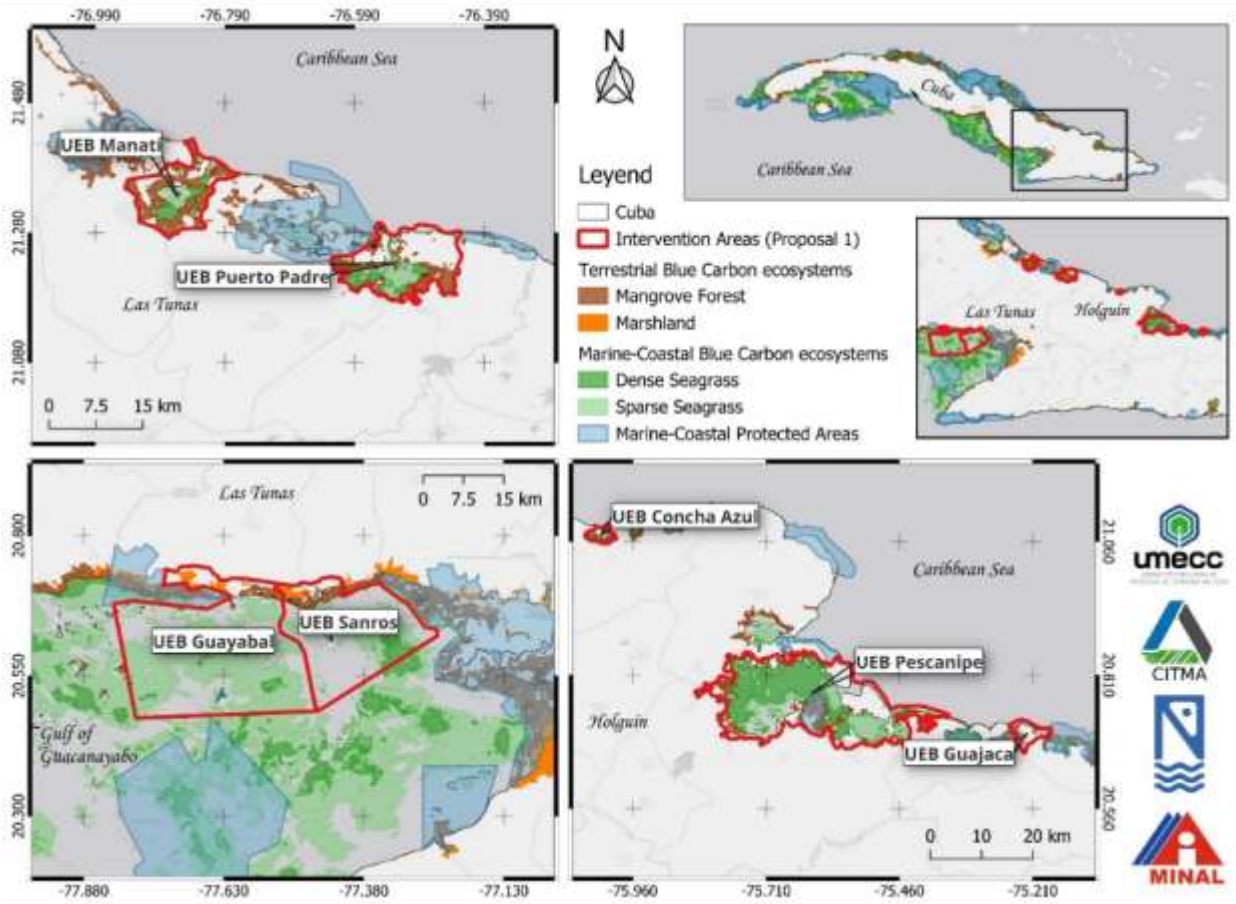


Figure 6 – Indicative UEB-linked screening areas in Holguín and Las Tunas, showing mangrove, seagrass, marsh and protected-area contexts. Final intervention sites will be selected during full proposal preparation through climate-risk, safeguards, feasibility, tenure/permitting and non-duplication screening. Source: CITMA/UMECC/MINAL.

The second stream focused on community and productive-sector engagement in the target coastal areas of Holguín and Las Tunas. A structured questionnaire (Annex II) was developed and administered from 11 June 2026 onwards to community members, aquaculture and fisheries producers, UEBs, cooperatives, farms and processing sites, and women's, youth and community organizations. The questionnaire gathered local perspectives on climate risks, vulnerabilities, adaptation barriers, livelihood challenges, community priorities, social dynamics and adaptation opportunities.

Inputs used to date include:
National authorities: CITMA, relevant climate adaptation and environmental authorities, and the Designated Authority endorsement process.

Sector institutions: MINAL and aquaculture/fisheries counterparts, including available information on cooperatives, productive assets and sector priorities.

Technical and scientific institutions: inputs from ONN (relevant national standards), CITMA, CEAC/REMARCO-linked experts, the Institute of Oceanology, universities and other partners supporting MRV, standards, ecosystem monitoring and coastal resilience — including relevant national standards and regulatory frameworks, and CITMA-led site identification and technical scoping

Policy and programme evidence: Tarea Vida, national and sectoral plans, available site and aquaculture data, and lessons from prior ecosystem-restoration and climate-resilience initiatives in Cuba.

These inputs identified priorities related to coastal protection, water-quality stabilization, reduced climate-related aquaculture losses, ecosystem restoration, local monitoring, safeguards, gender-responsive participation and long-term maintenance of adaptation benefits. They shaped the focus on aquaculture-linked ecosystem restoration, adaptation MRV, locally governed adaptation prioritization, social accountability and O&M continuity.

During the PFG phase, structured consultations will be carried out in Holguín and Las Tunas with provincial and municipal authorities; aquaculture and fisheries cooperatives, UEBs and productive entities; coastal communities in proposed intervention areas; women, youth, low-income households and other vulnerable groups; and relevant community organizations, technical service providers and civil society actors, building on data, feedback and knowledge gathered through surveys and workshops.

The PFG consultations will validate site selection, beneficiary numbers, climate risks, adaptation priorities, safeguards risks, gender barriers, benefit-access criteria, elite-capture mitigation measures, grievance arrangements and the role of Local Adaptation Committees, including whether they will have decision-making, prioritization or advisory functions within the broader safeguards, fiduciary and technical approval framework. Consultations will be accessible, gender-responsive and documented, with sex-disaggregated participation data where feasible. FPIC-aligned procedures will be applied where required by the Adaptation Fund ESP and national context. Issues raised during consultations will be reflected in the full proposal design, ESMP, Gender Action Plan and results framework.

Initial Gender Analysis

Women contribute to aquaculture, fisheries processing, ecosystem stewardship, household livelihood diversification and local resilience in the target coastal areas. At concept stage, the main gender-related barriers identified include:

- Limited participation in cooperative leadership, local planning and climate-related decision-making;
- Lower access to finance, productive assets, equipment and climate-resilient technologies;
- Time burdens and care responsibilities that constrain participation in training and paid activities;
- Weaker access to markets, post-harvest value chains and benefit-sharing opportunities.

The project will address these barriers by prioritizing women's participation in training on MRV, ecosystem monitoring, restoration, climate-resilient aquaculture and post-harvest loss reduction. Local Adaptation Committees and consultation processes will include gender-responsive participation measures so that women and youth can influence adaptation priorities, safeguards monitoring and O&M planning.

At concept stage, 40% of target beneficiaries translate into an indicative 1,200-2,500 women direct beneficiaries within the estimated 3,000-5,000 direct beneficiaries, with final numbers to be validated through sex-disaggregated beneficiary mapping during the PFG/full proposal stage. Selection criteria will explicitly prioritize women-headed households, women involved in processing, vending, ecosystem stewardship and local monitoring, low-income households, youth and other vulnerable groups, while public disclosure of eligibility criteria, grievance channels and social-audit feedback will reduce risks of elite capture.

Targeted measures will go beyond general inclusion: the project will apply sex-disaggregated baselines and indicators; schedule consultations and training at times and locations accessible to women; set minimum participation targets for women in training, local monitoring and governance; support women-led or women-benefiting activities in post-harvest handling, ecosystem restoration nurseries,

community monitoring, O&M services and climate-resilient value-chain roles; and track whether women actually access equipment, paid work, technical certification, decision-making roles and adaptation-investment benefits.

At concept stage the project sets provisional participation targets of at least 40–50% women and approximately 30% youth. These are blended equity-uplift targets across the project's beneficiary groups, reflecting the Adaptation Fund Gender Policy's expectation of gender-responsive thresholds together with the available evidence for each group: (i) the aquaculture/fisheries workforce – Ministry of the Food Industry (MINAL) / OSDE Pesca (Grupo Empresarial de la Industria Pesquera) enterprise records and national fisheries-sector data from the Oficina Nacional de Estadística e Información ; (ii) community members in ecosystem restoration and monitoring work – the documented participation experience of the AF-financed Manglar Vivo ecosystem-based adaptation project in Artemisa and Mayabeque (see below); and (iii) female participation in Cuban technical, scientific and governance roles – Cuba's Programa Nacional para el Adelanto de las Mujeres (Decreto Presidencial 198/2021) . The exact site-specific, sex- and age-disaggregated data for the candidate UEB sites and municipalities (Annex I) are being obtained from OSDE Pesca; the targets are therefore provisional and will be confirmed or adjusted at PFG stage through beneficiary mapping and the site-specific gender analysis. The 40–50% women's participation target is consistent with the demonstrated precedent of the AF-financed Manglar Vivo project, which set a 45% female-beneficiary target that was exceeded by project end, with women representing 48% of direct and 50% of indirect beneficiaries (Terminal Evaluation, 2020) . Published age-disaggregated employment statistics for the aquaculture/fisheries sector in the target provinces are not yet available; the approximately 30% youth target is an indicative equity-uplift threshold rather than a statistically derived figure, informed by the youth out-migration and employment pressures in coastal Holguín and Las Tunas described in Part I. Consistent with the treatment of other indicative concept-stage parameters, this target is provisional and will be confirmed or adjusted at PFG stage once age-disaggregated data are obtained from OSDE Pesca and the Oficina Nacional de Estadística e Información through the beneficiary mapping exercise.

A full gender analysis, sex-disaggregated indicators and a Gender Action Plan will be prepared during the fully developed proposal stage, in line with the Adaptation Fund Gender Policy

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 draws on multiple perspectives by combining local adaptation needs, scientific expertise, national quality infrastructure and institutional policy priorities. At concept stage, direct site-level community consultations have not yet been completed; these will be undertaken during the PFG phase through localized consultations and needs assessment, including with fisheries and aquaculture cooperatives, productive entities, women, youth and vulnerable groups.

The innovation approach integrates:

Local and community perspectives: Local Adaptation Committees, cooperatives and beneficiary entities will help identify adaptation priorities, validate site-level risks, support community monitoring and provide feedback through participatory scorecards and social audits.

Scientific and technical perspectives: MRV, ecosystem monitoring and valuation approaches will be developed with Cuban technical institutions, including CITMA, ONN, CEAC/REMARCO-linked expertise, the Institute of Oceanology, universities and other relevant partners.

Productive-sector perspectives: Fisheries and aquaculture stakeholders will inform climate-resilient aquaculture measures, including water-quality management, salinity and temperature monitoring,

pond/dyke resilience where applicable, biosecurity, post-harvest loss reduction and business-continuity needs.

Institutional and policy perspectives: The project will be anchored in Cuban institutions and aligned with Tarea Vida, the NDC, aquaculture policy and national environmental safeguards.

Together, these perspectives position the project as an integrated ecosystem-based adaptation model for climate-resilient aquaculture, fisheries-linked livelihoods and coastal communities. Community and productive-sector inputs will define priority adaptation needs, including ecosystem restoration, water-quality and salinity management, post-harvest resilience, livelihood stabilization and local maintenance arrangements. Scientific and technical partners will provide the monitoring, ecosystem-services valuation and quality-infrastructure capacity needed to measure adaptation benefits, assess ecosystem condition and prioritize future adaptation investment. National and local institutions will embed the model in Cuba's planning, safeguards, standards and O&M systems, creating an evidence-based pathway for coastal ecosystem recovery, resilient productive systems, inclusive local governance and investment-ready maintenance planning across vulnerable Cuban coastal landscapes.

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

Adaptation Fund support is required to finance the additional costs of moving from fragmented technical readiness and restoration needs to an integrated, operational, adaptation model for coastal and aquaculture resilience. Without AF funding, Cuba would not have sufficient resources, technical know-how and capacity to combine ecosystem-based adaptation, climate-resilient aquaculture, MRV, safeguards, ecosystem-service valuation and locally governed continuity planning in the target areas. The requested financing therefore represents the full cost of shifting from a business-as-usual development and technical-readiness pathway to a climate-resilient coastal adaptation pathway in Holguín and Las Tunas. Baseline public programmes and existing technical cooperation can support policy, monitoring or sector development, but they do not provide an integrated adaptation model combining site-level ecosystem restoration, aquaculture-linked productive resilience measures, natural capital accounting and ecosystem-services valuation frameworks, adaptation MRV, safeguards and O&M continuity needed to achieve the concept-note adaptation outcomes.

The project addresses climate risks that would otherwise remain underfunded: degradation of mangroves, seagrasses and coastal wetlands that protect communities and aquaculture-linked productive assets; increasing salinity, temperature and water-quality stress affecting aquaculture and fisheries-linked livelihoods; limited site-level adaptation monitoring; limited ecosystem-service valuation and monitoring, and weak local arrangements for maintaining ecosystem-based adaptation benefits after project closure.
AF resources will finance:

- Direct ecosystem restoration and improved management in aquaculture-linked coastal zones, including approximately 500 ha of mangroves, seagrasses, saltmarshes, coastal wetlands and associated buffer ecosystems that reduce exposure, stabilize shorelines, regulate salinity and water quality, and support nursery habitats;
- Climate-resilient aquaculture and fisheries measures, including water-quality, salinity, temperature, biosecurity, post-harvest and business-continuity improvements for 5-8 cooperatives/UEBs and associated vulnerable coastal communities;
- Adaptation-MRV and data-management system to measure ecosystem condition, climate-risk reduction, water-quality and livelihood-resilience benefits, with biodiversity/habitat-condition indicators and complementary carbon-stock co-benefit evidence where relevant, standards readiness and ecosystem-service valuation;
- Local governance, safeguards, grievance, social-audit and O&M continuity arrangements, including gender-responsive consultation, participatory monitoring and transparent benefit-access criteria;

- Learning, policy integration and replication tools for scaling the model. These outputs will prepare future investment cases for public, cooperative, sectoral or climate-finance sources after the AF grant period without making such finance a condition for grant-period delivery.

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

Sustainability has been built into the project design through institutional anchoring, local capacity-building, O&M planning, ecosystem-services valuation, adaptation investment readiness, policy integration and long-term ecosystem-based resilience.

Institutional sustainability: Adaptation MRV, natural capital accounting, ecosystem-services valuation, safeguards and data-management functions will be anchored in CITMA and relevant Cuban technical institutions, including ONN, CEAC/REMARCO-linked partners, provincial authorities and sector institutions. This will strengthen national and local capacity to monitor ecosystem condition, measure adaptation benefits, assess economic value of ecosystem-services and use evidence in planning, budgeting and investment prioritization.

Financial and operational sustainability: The project will estimate recurrent costs for ecosystem maintenance, productive-site O&M, adaptation monitoring, safeguards, local governance and data management. The natural capital accounting and ecosystem-services valuation framework will help translate ecosystem benefits, such as coastal protection, salinity buffering, water-quality regulation, nursery functions and livelihood resilience, into investment-ready evidence for public budgeting, cooperative contributions, in-kind support, sectoral programmes, concessional finance, private sector partnerships, results-based or other adaptation investment finance. This evidence base will support future investment cases by clarifying the economic value of ecosystem-based adaptation, the costs of maintaining adaptation benefits, and the institutions responsible for sustaining them.

For the adaptation MRV and local monitoring system specifically, recurrent operation is indicatively estimated at USD 140,000-220,000 per year after establishment, covering field monitoring, laboratory analysis, GIS/remote-sensing updates, database management, QA/QC and reporting, equipment calibration/replacement, and periodic independent technical review. During the project period, establishment and initial operation of the MRV system will be financed through the AF grant. The above USDannual cost estimate refers to the indicative annual operating cost once the system is established, particularly for post-project sustainability planning, and will be confirmed at full proposal stage based on final site selection, monitoring frequency, laboratory tariffs and institutional O&M agreements. Output 1.5 will deliver a transitional plan for recurrent MRV costs, local monitoring and institutional transition, including indicative annual O&M cost estimates, data-governance roles, institutional responsibilities, and public, sectoral and local financing sources for covering recurrent costs after project closure.

Community sustainability: Local Adaptation Committees, cooperative participation, community monitoring, participatory scorecards, social audits and accessible grievance mechanisms will strengthen local ownership and accountability. These arrangements will help ensure that maintenance priorities, adaptation investments and benefit-sharing decisions reflect the needs of women, youth, vulnerable households, productive entities and coastal communities.

Environmental sustainability: Restored and better-managed mangroves, seagrasses, saltmarshes, wetlands and associated buffer ecosystems will provide longer-term coastal protection, erosion control, salinity regulation, water-quality improvement, habitat connectivity and nursery functions that support climate-resilient aquaculture, fisheries-linked livelihoods and coastal community resilience.

Policy and investment-readiness sustainability: Lessons, tools, valuation outputs, O&M plans and replication pathways will be integrated into Tarea Vida, NDC implementation, aquaculture planning and relevant national or provincial strategies. By creating evidence on ecosystem condition, adaptation

benefits, service values, recurrent costs and maintenance needs, the project will prepare future adaptation investments for scale-up across other vulnerable Cuban coastal landscapes.

The full proposal will specify post-grant responsibilities, recurrent-cost estimates, institutional roles, O&M arrangements and financing pathways for maintaining project outcomes after the Adaptation Fund grant period.

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

The project is expected to generate positive environmental and social benefits by restoring and improving the management of mangroves, seagrasses, coastal wetlands and associated buffer ecosystems; strengthening climate-resilient aquaculture and fisheries-linked livelihoods; improving water-quality, salinity, climate-risk and ecosystem monitoring; supporting targeted post-harvest resilience measures; and strengthening inclusive locally led adaptation governance, O&M planning and investment-readiness for future maintenance and scale-up.

The project is classified as Category B under the Adaptation Fund Environmental and Social Policy (ESP). This classification is appropriate because the potential adverse impacts identified at concept stage are expected to be limited in number, site-specific, smaller in scale, largely reversible and manageable through screening, design controls, mitigation, monitoring and adaptive management.

The main potential environmental and social risks identified at concept stage are:

- Temporary disturbance to mangroves, seagrasses, saltmarshes or associated coastal habitats during restoration, monitoring or small-scale works;
- Potential water-quality, sediment, waste-management or effluent risks linked to restoration and aquaculture resilience activities;
- Occupational health and safety risks for workers, field teams and community participants;
- Unequal access to project benefits, including possible elite capture by better-off cooperative members or exclusion of women, youth, low-income households, informal workers and other vulnerable groups;
- Possible tenure, land-use or resource-access conflicts at selected sites;
- Climate risks to restored ecosystems and aquaculture assets, including hurricanes, storm surge, sea-level rise, drought, heat stress, extreme rainfall and salinity intrusion;
- Potential chance finds or impacts on physical and cultural heritage during small works;

Risks related to Indigenous Peoples or communities with indigenous heritage will be confirmed through screening and consultations. No distinct Indigenous Peoples group has been confirmed at concept stage; culturally appropriate consultation and FPIC-aligned procedures will be applied where required by the AF ESP and national context.

Component 3.4 will finance preparation of one to five adaptation investment-readiness studies only. The AF grant will not approve, procure, finance or implement the future investments identified through those studies; any future investment would require separate feasibility assessment, financing approval, permitting, stakeholder consultation, and environmental, social and gender safeguards screening before implementation. Therefore, Component 3.4 studies are not treated as AF-financed unidentified sub-projects.

The project will not finance Category A or high-risk activities, physical displacement, unresolved economic displacement or access restrictions, unresolved tenure or resource conflicts, conversion or degradation of critical habitats, introduction of invasive or non-approved species, large-scale hard infrastructure or coastal works with significant impacts, activities with significant pollution, nutrient-loading, disease or biosecurity risks, activities involving hazardous chemicals or significant waste

streams, activities affecting known cultural heritage without authorization, or maladaptive investments that increase long-term exposure to sea-level rise, storm surge, flooding, drought or heat stress.

The full proposal will include an Environmental and Social Management Framework (ESMF), with site-specific Environmental and Social Management Plans (ESMPs) or equivalent mitigation measures prepared where screening requires them. The ESMF will include eligibility and exclusion criteria, screening tools aligned with the 15 AF ESP principles, risk categorization, consultation, disclosure, grievance and gender requirements, CITMA permitting and national regulatory compliance procedures, mitigation measures, monitoring indicators, responsibilities, budgets, timelines, reporting, recordkeeping and corrective-action procedures.

The safeguard process for AF-supported site-level activities will be as follows: define the proposed activity, location, beneficiaries, technology/design, budget and implementation entity; apply the exclusion list and legal/permitting eligibility check; screen the activity against the AF ESP, AF Gender Policy, Cuban law, climate hazards, tenure/resource access, biodiversity and vulnerable-group considerations; categorize the activity as low, medium or ineligible/high risk; identify mitigation, monitoring, consultation and grievance measures and prepare a site-specific ESMP or equivalent instrument where needed; disclose the relevant safeguard findings and consult affected stakeholders, including women and vulnerable groups; obtain CITMA/competent-authority clearances and UNIDO safeguard no-objection before approval; and monitor implementation, record incidents or grievances, update the ESMP/ESMF where required, and report safeguards performance through project reporting and PPRs.

UNIDO, as Implementing Entity, will provide overall oversight, safeguard due diligence, no-objection for screened activities, supervision of Executing Entities and reporting to the Adaptation Fund on ESP and Gender Policy compliance. CITMA and competent Cuban authorities will lead or validate national environmental screening, permitting, technical review and compliance with Cuban regulatory requirements. Local Adaptation Committees, cooperatives, UEBs and beneficiary entities will identify priorities, provide site information, support inclusive consultations, operate social accountability and grievance feedback channels, and participate in community monitoring.

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		Risk level: Medium. Ecosystem restoration, coastal ecosystem monitoring, aquaculture/fisheries resilience measures, post-harvest measures, O&M planning and any field work linked to investment-readiness studies must comply with Cuban environmental, coastal-zone, aquaculture, water-quality, construction, labour, cultural-heritage and occupational health and safety requirements. Mitigation: all activities will undergo legal and permitting screening; CITMA EIA screening and authorizations will be obtained where required; relevant Cuban standards will be integrated into designs, contracts and supervision; and no works, equipment installation or site-level physical measures will proceed before required approvals are in place.
Access and Equity		Risk level: Medium. Overall positive impact by targeting vulnerable coastal communities with limited access to climate-resilient technologies and services. However better-connected cooperatives, formal asset holders or local elites could

		capture training, equipment, local employment, decision-making roles, O&M support or investment-readiness opportunities. Mitigation: transparent eligibility and selection criteria, public disclosure of opportunities, inclusive outreach to remote and low-income households, women and youth participation targets, community scorecards/social audits, disaggregated beneficiary monitoring and an accessible grievance redress mechanism.
Marginalized and Vulnerable Groups		Risk level: Medium. Remote coastal households, low-income fishers and aquaculture workers, women-headed households, elderly people, people with disabilities, Afro-descendant households, informal processors/vendors and youth may be excluded from consultations, decision-making or benefits. Mitigation: vulnerability screening during full proposal preparation; targeted consultations at convenient times and locations; participation support where needed; transparent beneficiary criteria; and monitoring of benefit distribution by sex, age, location and vulnerability status. Afro-descendant communities, recognized as a marginalized group in the Cuban context, are specifically targeted for inclusion: the full proposal will document their consultation and incorporate their needs and priorities, with disaggregated monitoring of their participation and benefits.
Human Rights		Risk level: Medium. The project is expected to support rights to food security, decent work, participation and a healthy environment, but risks could arise if consultation, access to information or grievance handling are weak. The Medium risk rating is aligned with the related Access and Equity, Marginalized and Vulnerable Groups, and Gender Equity principles. Mitigation: rights-based stakeholder engagement, non-discrimination requirements, disclosure of selection decisions and safeguard findings, grievance redress, social audits and UNIDO oversight of partner and contractor compliance, applied jointly with the mitigation measures defined under the Access and Equity, Marginalized and Vulnerable Groups, and Gender Equity principles (transparent eligibility and selection criteria, public disclosure of opportunities, inclusive outreach, women and youth participation targets, community scorecards/social audits and disaggregated beneficiary monitoring.

Gender Equity and Women's Empowerment		Risk level: Medium. Gender norms, time burdens, unequal access to assets, finance, technical roles and leadership could limit women's participation and benefits, particularly for women-headed households and women active in informal processing, vending and care work. Mitigation: a full gender analysis and Gender Action Plan will be prepared at full proposal stage; consultations will be gender-responsive and scheduled to reduce participation barriers; training and governance will include women's participation targets; indicators will be sex-disaggregated; budgeting will be gender-responsive; measures will avoid increasing unpaid workloads; and women's access to jobs, assets, finance and decision-making will be monitored.
Core Labour Rights		Risk level: Medium. Restoration, monitoring, aquaculture upgrades, small works, post-harvest measures and community implementation may involve occupational health and safety hazards or informal work arrangements. In particular, pond/dyke reinforcement, drainage and water-control structures, biosecurity and chemical handling, and electrical/backup-power installation for cold-chain continuity (Outputs 2.2 and 2.3) carry site-level physical, electrical and chemical-exposure hazards that require active site-level management beyond the existence of Cuba's labour and occupational-health regulatory framework; the risk level is therefore assessed as Medium, consistent with the applicable Cuban technical standards for marine-exposed construction and electrical safety identified in Section G (e.g., Resolución No. 159/2014). Mitigation: compliance with Cuban labour and OHS requirements; prohibition of child and forced labour; labour and OHS clauses in contracts and beneficiary agreements; safety training; PPE; incident reporting; and supervision of worker conditions. site-specific OHS risk assessments and method statements covering physical, electrical and chemical-exposure hazards prior to commencement of works, in line with the applicable Cuban technical standards identified in Section G; certified electrical installation and safe-isolation procedures for backup-power and cold-chain equipment; safe storage, handling and disposal protocols for biosecurity and treatment chemicals; and OHS provisions embedded in the ESMF and site-specific ESMPs.
Indigenous Peoples		Risk level: Low. No distinct Indigenous Peoples group has been confirmed at concept stage, and this will be confirmed through screening and consultations to verify whether Indigenous Peoples as defined by the AF ESP, or communities with self-identified indigenous heritage, are present or affected at selected sites.

		Mitigation: culturally appropriate consultation and FPIC-aligned procedures will be applied where required by the AF ESP and national context; activities affecting such groups will not proceed without the required process and documentation. Coastal communities in Holguín and Las Tunas include Afro-descendant populations and communities with self-identified indigenous heritage, recognized as marginalized groups in the Cuban context; their presence, needs and priorities are addressed primarily under the Marginalized and Vulnerable Groups principle, and the project will apply culturally appropriate, FPIC-aligned consultation to these groups regardless of whether any are subsequently confirmed as Indigenous Peoples under the AF ESP definition
Involuntary Resettlement		Risk level: low. No land acquisition or displacement anticipated; restoration on public/co-managed lands. The project does not intend to finance activities that require physical displacement. Economic displacement or access restrictions could arise if restoration, aquaculture upgrades or small works alter access to fishing, aquaculture, landing, processing or coastal-resource areas. Mitigation: exclusion of activities requiring physical displacement or unresolved economic displacement; tenure and resource-access screening; avoidance of unresolved conflicts; consultation with affected users; and livelihood-restoration or design changes if access impacts are identified.
Protection of Natural Habitats		Risk level: Low-Medium The project is expected to improve mangroves, seagrasses, wetlands and associated coastal habitats, but restoration, monitoring, hydrological works or aquaculture-linked measures may cause temporary disturbance if poorly sited, timed or supervised. Mitigation: biodiversity-sensitive site selection; avoidance of critical habitats and protected-area restrictions that would cause adverse impacts; native-species restoration protocols; seasonal restrictions; method statements; ecological supervision; and monitoring of habitat condition.
Conservation of Biological Diversity		Risk level: Medium. Positive biodiversity benefits are expected through ecosystem recovery and improved management, but risks include use of non-approved species or seed sources, disease transfer, genetic impacts, disturbance to sensitive species or poorly managed aquaculture biosecurity. Mitigation: use of native or nationally approved species and seed sources; biosecurity protocols; disease and escape monitoring; no invasive species; technical review by competent Cuban authorities and research institutions; and biodiversity indicators in ESMPs.
Climate Change		Risk level: Medium. The project is an adaptation intervention, but hurricanes, storm surge, sea-level rise, drought, heat stress, salinity intrusion and extreme rainfall may damage

		restored ecosystems, aquaculture assets, monitoring infrastructure, post-harvest assets or access routes before benefits are fully realized. Mitigation: climate-risk screening; conservative design standards using current and projected hazards; resilient siting/elevation and drainage; diversified intervention sites; storm-preparedness and contingency procedures; O&M planning; adaptive management triggers; and exclusion of maladaptive investments that increase long-term exposure.
Pollution Prevention and Resource Efficiency		Risk level: Low-Medium. Localized sediment disturbance, wastewater, nutrient loading, solid waste, fuel or chemical handling, and inefficient energy or water use may occur around restoration, aquaculture, post-harvest or small infrastructure activities. Mitigation: water-quality and salinity monitoring; effluent and waste-management controls; erosion and sediment measures; low-input and low-pollution aquaculture practices; renewable or efficient energy options where feasible; safe storage and disposal procedures; and compliance with Cuban environmental standards.
Public Health		Risk level: Low. The project is expected to improve food-system and ecosystem resilience, but field activities, water systems, aquaculture operations or post-harvest handling may create safety, hygiene, vector or food-safety risks if poorly managed. Mitigation: hygiene and food-safety protocols; safe water and pond-management practices; OHS training and PPE; incident reporting; and coordination with relevant health, aquaculture and local authorities.
Physical and Cultural Heritage		Risk level: Low. No activities are currently planned in known cultural heritage sites, but chance finds may occur during small works, drainage improvements, pond rehabilitation or site preparation. Mitigation: screening against known cultural heritage locations; avoidance or redesign where needed; chance-find procedures in ESMPs and contracts; immediate work stoppage and notification of competent authorities if chance finds occur.
Lands and Soil Conservation		Risk level: Low. Localized soil disturbance, erosion, compaction, salinity changes or contamination may occur if drainage, pond/dike reinforcement, access works or restoration activities are poorly designed. Mitigation: erosion and sediment controls; climate-resilient drainage and water-management design; safe waste handling; stabilization of disturbed areas; avoidance of erosion-prone or unstable sites; and monitoring of soil and salinity conditions where relevant.

The initial ESP screening identifies predominantly low to medium risks associated with ecosystem restoration, small-scale aquaculture and fisheries resilience measures, local governance processes and climate exposure in hurricane-prone coastal areas. Key risks relate to inclusion and equity, temporary

ecological disturbance, occupational health and safety, water quality, tenure or resource-access issues, and climate hazards affecting restored ecosystems and aquaculture assets. These risks will be managed through regulatory compliance, exclusion of high-risk activities, environmental and social screening, climate-resilient design, participatory governance, grievance redress, social audits and adaptive management. Reflecting this assessment, the Human Rights and Core Labour Rights principles are both rated Medium: the Human Rights rating is aligned with the related Access and Equity, Marginalized and Vulnerable Groups, and Gender Equity principles, whose identified risks of exclusion, elite capture and unequal benefit access are human-rights-relevant; and the Core Labour Rights rating reflects the site-level physical, electrical and chemical-exposure hazards associated with pond/dyke reinforcement, drainage and water-control structures, biosecurity and chemical handling, and electrical/backup-power installation under Outputs 2.2 and 2.3, which will be managed through the applicable Cuban technical standards identified in Section G (e.g., Resolución No. 159/2014), site-specific OHS risk assessments, and OHS provisions embedded in the ESMF and site-specific ESMPs

Because some site-level activities will be confirmed during full proposal preparation, the project will apply a structured safeguards framework aligned with the Adaptation Fund ESP. This will include: (i) an exclusion list for Category A/high-risk activities; (ii) environmental, social, gender and climate-risk screening of proposed activities; (iii) risk categorization and identification of mitigation measures; (iv) CITMA permitting and approvals by relevant Cuban authorities; and (v) monitoring, reporting and corrective action for safeguard performance.

At the full proposal stage, an Environmental and Social Management Framework (ESMF) will be developed to guide safeguards application across all site-level activities, together with site-specific ESMPs or equivalent mitigation measures where screening requires them. The ESMF/ESMP instruments will detail screening tools, risk analysis, mitigation measures, institutional roles, monitoring indicators, reporting arrangements and grievance procedures.

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 UNIDO as the accredited Multilateral Implementing Entity (MIE). UNIDO will provide fiduciary oversight, quality assurance, safeguards due diligence, supervision, monitoring and reporting to the Adaptation Fund Board. CITMA will serve as the lead national Executing Entity for national coordination, site-selection validation, permitting, safeguards engagement, consultations, Local Adaptation Committee coordination, institutional uptake and site-level execution. On an exceptional basis, and upon the formal written request of Cuba's designated authority (Letter of Endorsement submitted along the concept) for the Adaptation Fund, UNIDO may execute or co-execute a limited set of specialized activities where these cannot be efficiently executed by national entities, where international procurement or quality assurance is required, or where UNIDO has a clear comparative advantage. Across Components 1 and 4, this may indicatively include specialized procurement and contracting; technical quality assurance for adaptation MRV (Output 1.1.), digital monitoring and selected climate-technology solutions; SEEA ecosystem-service valuation expertise (Output 1.3.); investment-readiness support; targeted financial-resilience capacity building; knowledge management, South–South exchange and replication support (Component 4). The specific activities and corresponding budget executed or co-executed by UNIDO will be confirmed at full-proposal stage; execution costs attributable to UNIDO's limited EE role will be capped at 1.5% of the portion of the project executed by UNIDO, shown separately in the detailed budget and budget notes, and not double-charged against the IE fee.

UNIDO will not execute site-level ecosystem restoration works, local consultations, beneficiary selection, local governance functions, Cuban permitting, grievance management or local O&M. These functions will remain under CITMA-led national execution, in coordination with relevant Cuban institutions and local actors. UNIDO's Implementing Entity and Executing Entity functions will remain institutionally, operationally and financially separate, with separate decision-making, financial management, documentation, oversight and execution responsibilities.

It is envisaged that the project will establish a Project Management Unit or equivalent project management arrangement at the national level to support day-to-day coordination of project activities, work planning, procurement coordination, stakeholder engagement, monitoring inputs and reporting inputs. A Project Steering Committee (PSC) composed of UNIDO, CITMA and other relevant Government counterparts to be confirmed during the PFG/full proposal phase will provide overall strategic guidance and direction, review implementation progress, ensure alignment with national adaptation priorities, and facilitate inter-institutional coordination

National execution and coordination

CITMA will serve as the lead national Executing Entity. It will coordinate national implementation, ensure alignment with Tarea Vida, Cuba's NDC, national environmental regulations and relevant national climate and environmental governance frameworks, and coordinate participating national, provincial and local institutions. A National Steering Committee or equivalent project governance arrangement will be established to provide strategic guidance, review implementation progress, ensure alignment with national adaptation priorities and facilitate inter-institutional coordination. Its final composition and operating procedures will be confirmed during the PFG/full proposal phase.

CITMA will work through relevant technical units and institutions to support adaptation MRV, complementary biodiversity and carbon-stock co-benefit monitoring where relevant, data management, methodological consistency and technical capacity building. These functions will support adaptation decision-making and future readiness, without making project outcomes dependent on any additional revenues or market transactions.

MINAL will participate as the national sector institution for aquaculture and fisheries. It will support identification and validation of UEB-linked aquaculture/fisheries sites, coordination with UEBs and cooperatives, provision of sector data and technical inputs, and O&M arrangements for climate-resilient aquaculture/fisheries and post-harvest measures. MINAL will not be treated as a separate Executing Entity unless it is assigned direct responsibility for managing AF-funded execution budgets at full-proposal stage.

Technical partners

ONN will support standards, quality assurance and alignment with relevant Cuban and international technical standards, including standardization, metrology, data traceability, laboratory QA/QC and ISO standards relevant to adaptation risk and quality-infrastructure linkages.

CEAC, REMARCO-linked institutions, the Institute of Oceanology, universities and other Cuban technical partners will contribute scientific, laboratory, ecosystem-monitoring and capacity-building support. IAEA may be engaged as a specialized technical partner, building on related IAEA Technical Cooperation programmes in Cuba, particularly for marine-coastal monitoring, laboratory quality assurance, data traceability, baseline methods, regional exchange and South–South learning, in cooperation with Cuban counterparts including CITMA, ONN, CEAC, the Institute of Oceanology and relevant universities.

Additional specialized expertise may be mobilized where needed, including SEEA Ecosystem Accounting experts, ISO and quality-infrastructure experts, coastal ecosystem and blue-economy experts, and financial-resilience or blue-finance experts, subject to confirmation during the PFG/full

proposal phase. These partners will provide technical assistance, peer review, training, methodology development, knowledge exchange or feasibility support.

Local implementation support

In Holguín and Las Tunas, provincial and municipal authorities, aquaculture and fisheries cooperatives, UEBs, community organizations and Local Adaptation Committees will support site-level implementation, monitoring and feedback. Local Adaptation Committees will facilitate participatory planning, safeguards feedback, community monitoring, grievance inputs, social accountability and gender-responsive participation, particularly for women, youth and vulnerable groups.

Local Adaptation Committees will provide documented recommendations on community priorities and O&M/aquaculture/fisheries resilience resource and investment needs. At concept stage, they are envisaged as advisory and participatory prioritization/social-accountability advisory bodies; they will not have independent authority to approve, reallocate or disburse Adaptation Fund resources. Final approval of budgets, procurement, safeguards clearance and resource allocations will remain with CITMA and the National Steering Committee/project governance arrangements, subject to UNIDO fiduciary, safeguards and procurement requirements as Implementing Entity.

Knowledge exchange and South–South learning

Knowledge exchange and South–South learning will take place with Caribbean SIDS and relevant technical networks, including REMARCO, under the knowledge management, learning and replication component. These exchanges will support dissemination and replication of the project's integrated ecosystem-based adaptation, adaptation MRV, SEEA ecosystem-service valuation, quality-infrastructure and aquaculture/fisheries resilience model. The project is a single-country project, so no formal regional implementation structure is required.

Legal context
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)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)

Objective 1: Establish a national adaptation MRV, quality-infrastructure, safeguards, ecosystem-accounting (SEEA EA) and ecosystem-service-valuation framework for coastal-ecosystem and aquaculture/fisheries adaptation in Holguín and Las Tunas.	Number of targeted national/provincial institutions with increased capacity to apply an operational adaptation MRV, QA/QC, safeguards, ecosystem-accounting and ecosystem-service-valuation framework, supported by trained practitioners. *Indicative target: at least 3 institutions and at least 50 practitioners (≥40% women/youth), disaggregated by gender where feasible.*	**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	750,000
Objective 2(a): Implement aquaculture-linked ecosystem-based adaptation in Holguín and Las Tunas (coastal ecosystem-restoration stream).	Number of hectares of priority mangroves, seagrasses, saltmarshes, wetlands and associated coastal buffer ecosystems restored, rehabilitated or placed under improved climate-resilient management. *Indicative target: at least 500 ha.*	**Outcome 5:** Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	1,450,000
Objective 2(b): Implement productive-sector resilience measures in Holguín and Las Tunas (climate-resilient aquaculture/fisheries productive-site, post-harvest and livelihood stream).	Number of UEB-linked aquaculture/fisheries productive sites adopting climate-resilient practices, protocols and/or physical assets, and number of people benefiting from diversified and strengthened climate-resilient livelihoods and sources of income. *Indicative target: 5–8 UEB-linked productive sites and approximately 500 direct beneficiaries – aquaculture producers, cooperative members and processing workers, ≥40% women, subject to baseline confirmation.*	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets	1,401,726

Objective 3: Strengthen locally led governance, safeguards, O&M continuity and investment-readiness for the integrated coastal adaptation model: establish Local Adaptation Committees (LACs) as locally led decision-support, community-monitoring and O&M-continuity bodies, and use MRV/SEEA ecosystem-service valuation and bankability appraisal to prepare replicable adaptation investment-readiness studies..	Number of MRV- and SEEA-informed adaptation investment-readiness/bankability studies prepared and validated for replication through the integrated, locally led governance and coastal adaptation model *Indicative target: 1–5 adaptation investment-readiness studies prepared; local Adaptation Committees or equivalent coordination arrangements operational in target municipalities/site clusters; safeguards, grievance redress, social audit and O&M-continuity processes operational;*	**Outcome 8:** Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	400,000
Objective 4: Generate evidence, lessons, knowledge products and a replication roadmap to support adaptive management, national uptake and replication of the integrated coastal adaptation model in Cuba and the region	Number of key findings and lessons generated on effective and efficient adaptation practices, products and technologies. *Indicative target: knowledge-product set and at least one replication/scale-up roadmap delivered.*	**Outcome 8:** Support the development and diffusion of innovative adaptation practices, tools and technologies	**8.** Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	250,000
Total outcome level grant amount				**4,251,726**
Project Outcome(s)	**Project Outcome Indicator(s)**	**Adaptation Fund Output**	**Adaptation Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1: National and provincial systems for adaptation MRV, quality assurance, safeguards, ecosystem accounting and ecosystem-service valuation are operational and used to plan, monitor and sustain coastal-	Number of targeted institutions with increased capacity to apply adaptation MRV, QA/QC, safeguards, ecosystem accounting and ecosystem-service valuation, by type, sector and scale. Number of practitioners trained, disaggregated by gender where feasible.	**Output 2.1:** Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	**2.1.1** No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability	750,000

ecosystem and aquaculture/fisheries-linked adaptation.	*Indicative target: at least 3 institutions; at least 50 practitioners.*		risks (by type, sector and scale)	
Outcome 2(a): Coastal ecosystems in Holguín and Las Tunas demonstrate increased resilience to climate hazards through restoration, rehabilitation or improved climate-resilient management.	Number of hectares of mangroves, seagrasses, saltmarshes, wetlands and associated coastal buffer ecosystems restored, rehabilitated or placed under improved climate-resilient management, by ecosystem type and scale. *Indicative target: app. 500 ha.*	**Output 5:** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	1,450,000
Outcome 2(b): Aquaculture/fisheries-dependent communities in Holguín and Las Tunas have diversified and strengthened climate-resilient livelihoods through productive-site, post-harvest and livelihood upgrades.	Number of UEB-linked aquaculture/fisheries productive sites strengthened through climate-resilient practices, protocols and/or physical assets, by sector and scale. Number of people with diversified or strengthened climate-resilient livelihoods and sources of income, subject to baseline confirmation. *Indicative target: 5–8 UEB-linked productive sites; approximately 500 direct beneficiaries. , ≥40% women)*	**Output 6:** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1. No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	1,401,726
Outcome 3: Local institutions, communities and productive entities have increased capacity to operate, maintain, finance and scale ecosystem-based adaptation and aquaculture/fisheries resilience measures.	Number of MRV- and SEEA-informed adaptation investment-readiness/bankability studies prepared and validated for replication through the integrated, locally led governance and integrated coastal EbA model, incl. number of Local Adaptation Committees (LACs) or equivalent arrangements operational, safeguards, grievance redress, social audit, gender/youth inclusion,	**Output 8:** Viable innovations are rolled out, scaled up, encouraged and/or accelerated	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	400,000

	community monitoring, O&M continuity and financial-planning processes operational. *Indicative target: 1–5 investment readiness studies prepared*			
Outcome 4: Evidence, lessons and tools support adaptive management, national uptake and replication of the integrated adaptation model in Cuba and other coastal/SIDS contexts.	Number of key findings on effective, efficient adaptation practices, products and technologies generated and disseminated. *Indicative target: knowledge product set and at least one replication and scale-up roadmap delivered.*	**Output 8:** Viable innovations are rolled out, scaled up, encouraged and/or accelerated	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	250,000
Total output level grant amount				**4,251,726**

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

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

A. [40]*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*:* *June 18, 2026*

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*

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.

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* Implementing Entity Coordinator	
Date: July 28, 2026	Tel. and email:
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	

ANNEX I. Preliminary Screening of Proposed Intervention Sites and Associated Protected Areas.
Source: CITMA. (Prospeccion de sitios de intervención del Proyecto.xls)

CITMA
MINISTERIO DE CIENCIA TECNOLOGIA Y MEDIO AMBIENTE

Dirección de Relaciones Internacionales

Letter of Endorsement by Government

June 18, 2026

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

Subject: Endorsement for "Innovative ecosystem-based adaptation and investment-readiness for coastal and aquaculture resilience in Cuba" by UNIDO.

In my capacity as designated authority for the Adaptation Fund in Cuba, I confirm that the above national grant proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the provinces of Las Tunas and Holguín.

Accordingly, I am pleased to endorse the above grant proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Industrial Development Organization (UNIDO) and executed by the Ministry of Science, Technology and Environment (CITMA) with partial specialized execution support from UNIDO.

Sincerely,

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

Dr.C. Lisbet Font Vila
Authority for the Adaptation Fund in Cuba

Escaneado con CamScanner

Project Formulation Grant (PFG)

Submission Date: , July 28, 2026

Adaptation Fund Project ID:
Country/ies: Cuba
Title of Project/Programme: Innovative ecosystem-based adaptation and investment-readiness for coastal and aquaculture resilience in Cuba
Type of IE (NIE/MIE): MIE
Implementing Entity: United Nations Industrial Development Organization
Executing Entity/ies: UNIDO

A. Project Preparation Timeframe

Start date of PFG	December 2026
Completion date of PFG	May 2027

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. Preparation of the full-fledge project document and required annexes 1.1.Apply site-selection screening (climate-risk, vulnerability,	Output 1: Full Projec Document Proposal Baseline report, inc final site-selectior and screening report	117,000	Project Proposal Formulation $12,000 Stakeholder Consultations (incl. local travel, FPIC roadmap, and validation workshop: $22,000

biodiversity, social, tenure/permitting, safeguards and non-duplication) to confirm the intervention sites; 1.2. To prepare a baseline report against the interventions proposed and indicators/targets aimed; incl. the site-specific baseline values (ecosystem condition, hydrology, salinity, exposure, aquaculture/fisheries losses and community priorities) 1.3. To carry out detailed stakeholders' consultations at local and national level, specifically on selected project sites, with local communities and indigenous heritage populations 1.4. To conduct an environmental and social assessment leading to an Environmental and Social Management Framework (ESMF) and Plan (ESMP); 1.5. To conduct an in-depth gender analysis and develop a Gender Action Plan (GAP);	Stakeholders' consultation report Environmental and Social Assessment including preparation of an ESMF, ESMP and a UNIDO Environmental and Social (E&S) Screening Form Gender analysis report and Gender Action Plan (GAP) developed Monitoring, Evaluation and Learning (MEL) pla and M&E framewo		Environmental & Social Management Framework (ESMF) and ESMP: $30,000 Final site selection screening: $10,000 (national and international experts) Gender and Baseline Assessment: 20,000 Subcontracting an entity for HACT assessment (based on UNIDO long-term agreement (LTA): $10,000 Monitoring, Evaluation and Learning (MEL) plan and M&E framework: $8,000 Validation and final submission support: $5,000

1.6. To develop a Monitoring, Evaluation and Learning (MEL) plan and M&E framework			
2. Technical Design and Specialized Frameworks: 2.1. To conduct a Climate Risk and Vulnerability Assessment (CRVA) and Technology Needs Assessment (TNA); 2.2. To design the national adaptation MRV, quality-infrastructure and SEEA ecosystem-service valuation framework, and scope adaptation investment-readiness framework	Output 2: Specialized Technical Design Package - CRVA and TNA report - Adaptation MRV, quality-infrastructure and SEEA ecosystem service valuation protocols and adaptation investment-readiness blueprint/templates	21,000	Climate Risk and Vulnerability Assessment (CRVA) and TNA: $10,000 Adaptation MRV, quality-infrastructure and ecosystem-service valuation framework design and investment-readiness scoping: $11,000
Implementing Entity Fee (8.5%) support cost	IE admin and technical support for project development, monitoring and supervision Compliance assurance	**$11,730**	IE technical and admin support and compliance assurance
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) affecting aquaculture ecosystems in Holguín and Las Tunas. It will analyze exposure and identify priority ecosystem-based adaptation (EbA) interventions. The CRVA will directly inform project design and risk management measures.
Baseline assessment	This assessment generates the biophysical and socioeconomic baseline required for indicators. Activities include: mapping ~500 ha of target mangrove/seagrass areas and surveying 5–8 aquaculture cooperatives (approx. 3,000–5,000 people). Data will be used to define targets for the full proposal, including livelihood metrics and institutional capacities.
Detailed Stakeholder consultations at local and national level	Inclusive consultations will engage aquaculture cooperatives, women's associations, and youth groups to validate sites and governance preferences for the ecosystem-based adaptation model, including Local Adaptation Committees (LACs). Outputs include a Stakeholder Engagement Plan (SEP) and a Free, Prior and Informed Consent (FPIC) roadmap, ensuring the project is locally led and inclusive.
Environmental and Social Management Assessment (ESMA)	As required by AF policy for projects with Unidentified Sub-Projects (USPs), this will produce a draft Environmental and Social Management Framework (ESMF) and ESMP. It will identify potential risks related to restoration and aquaculture pilots and define the preliminary risk category and mitigation measures.
In-depth gender analysis and Gender Action Plan (GAP)	A comprehensive analysis will assess the role and care burdens of women in aquaculture value chains. Outputs include gender-disaggregated baseline data and a full GAP aligned with AF Gender Policy, ensuring women exercise decision-making authority over adaptation benefits and resource-allocation decisions

Preparation of the AF Full Proposal	This includes drafting all mandatory sections: technical design, detailed budget, ESMF, GAP, and HACT assessments. The package will be prepared by a national adaptation expert to ensure compliance with the Adaptation Fund guidelines

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	
Signature	Ganna Onysko	**Date: 28 July 2026**
Project Contact Person	Alejandro Riviera Rojas +43 1 26026 3335 a.rivera-rojas@unido.org Silvia Zaszlos +43 1 26026 4012 s.zaszlos@unido.org	
Telephone	+43 1 26026 3708	
E-mail	TO: g.onysko@unido.org CC: gef@unido.org / glo@unido.org / f.haidara@unido.org	

Consultative process
At concept-note stage, project preparation has been informed by national technical scoping, policy and sector data review, and a series of presentations (6.11.2026 and 11.5.2026) and working exchanges with national counterparts and technical partners, whose feedback shaped the current design. Consultations during the Project Formulation Grant (PFG) phase will be used to inform, validate, refine or adjust this design.

Stakeholder consultations

Stakeholder consultations were undertaken during concept development to ensure country ownership, validate and complement the desk-based analysis, identify adaptation priorities and barriers, and strengthen the design of the proposed intervention. The process combined institutional consultations with community and productive-sector engagement in Holguín and Las Tunas.

The first stream focused on institutional stakeholders to ensure alignment with national priorities and ongoing initiatives. Between November 2025 and the present, two formal presentations and a series of technical working exchanges were held with CITMA, ONN, MINAL and technical and scientific institutions including IAEA technical experts, including a project workshop presentation on 13 May 2026 .These exchanges informed the project rationale, intervention logic and priority areas, and provided CITMA-led site identification and technical scoping (Annex I) of candidate UEB-linked areas in Las Tunas (UEB Guayabal, Sanros, Manatí, Puerto Padre) and Holguín (UEB Concha Azul and others), relevant national standards, and policy and programme evidence (Tarea Vida, national and sectoral plans, and lessons from prior ecosystem-restoration and climate-resilience initiatives in Cuba).

Preliminary CITMA-led site identification, technical scoping and consultations identified seven candidate Base Business Unit (Unidad Empresarial de Base, UEB)-linked areas (Annex 1): UEB Guayabal, UEB Sanros, UEB Manatí and UEB Puerto Padre in Las Tunas; and UEB Concha Azul, UEB Pescanipe and UEB Guajaca in Holguín. These candidate areas include oyster farms producing Crassostrea rhizophorae in Guayabal, Manatí and Puerto Padre; shrimp-farming sites in Sanros and Guajaca; and fisheries/oyster production areas in Concha Azul and Pescanipe linked to platform fisheries and inland fisheries, including species and resources such as crab, eel, clams and sea cucumber where relevant. The candidate areas are associated with rivers, bays and coastal water bodies including the Golfo de Guacanayabo, Río Yáquimo, Río Sevilla, Río Tana, Bahía de Manatí, Bahía de Puerto Padre, Bahía de Gibara, Bahía de Jururú, Bahía de Bariay, Bahía de Naranjo, Río Samá, Bahía de Banes, Bahía de Nipe, Bahía de Levisa, Río Sagua and Bahía de Sagua de Tánamo. The wider screening area covers approximately 214,519 ha and includes approximately 18,370 ha of mangroves, 1,665 ha of marsh vegetation and 86,036 ha of seagrass, as well as 13 associated protected areas. The project will not intervene across this full area. Final project interventions will be limited to at least 500 ha of priority mangrove, seagrass, wetland and buffer ecosystems and 5-8 UEB-linked productive sites, selected through climate-risk, safeguards, feasibility, tenure/permitting and non-duplication screening.

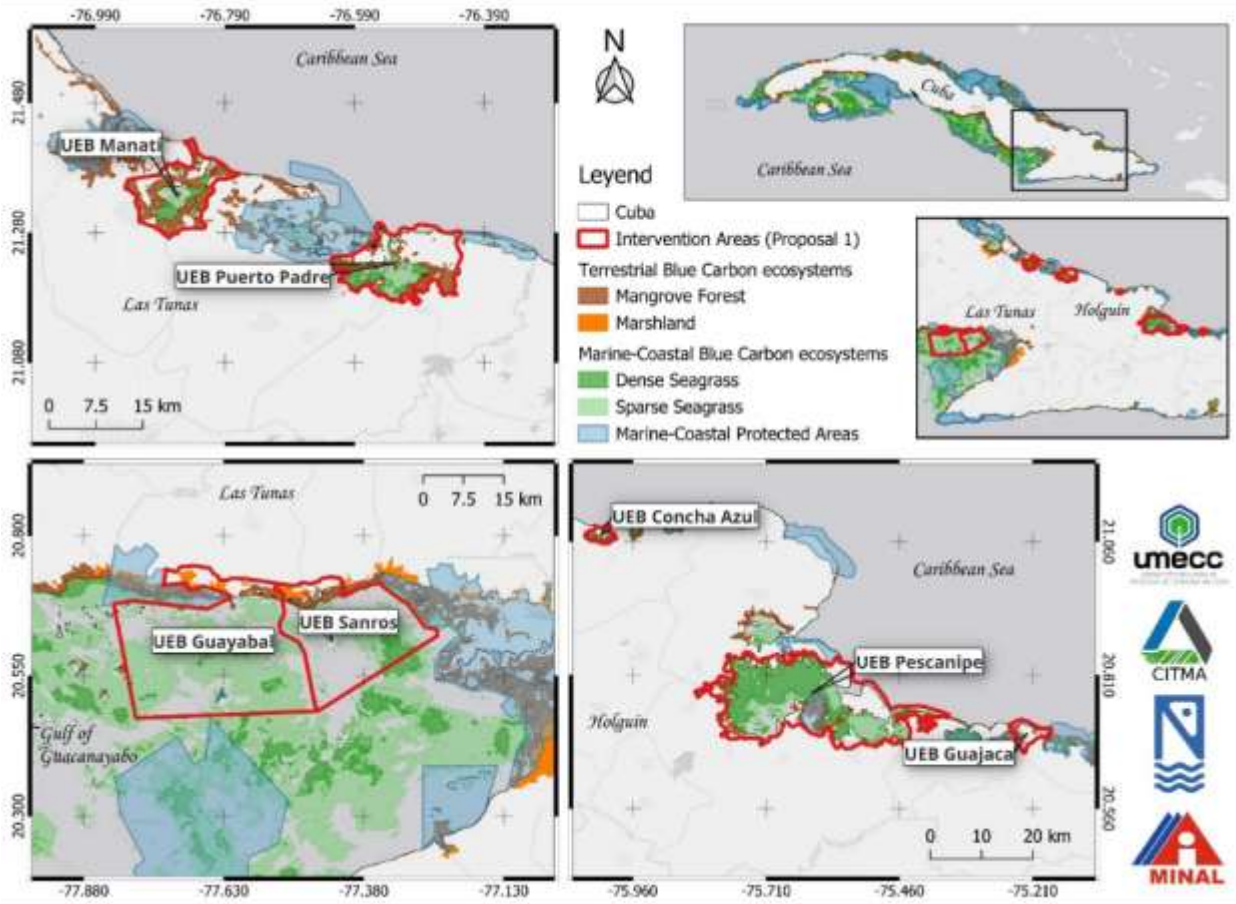


Figure 6 – Indicative UEB-linked screening areas in Holguín and Las Tunas, showing mangrove, seagrass, marsh and protected-area contexts. Final intervention sites will be selected during full proposal preparation through climate-risk, safeguards, feasibility, tenure/permitting and non-duplication screening. Source: CITMA/UMECC/MINAL.

The second stream focused on community and productive-sector engagement in the target coastal areas of Holguín and Las Tunas. A structured questionnaire (Annex II) was developed and administered from 11 June 2026 onwards to community members, aquaculture and fisheries producers, UEBs, cooperatives, farms and processing sites, and women's, youth and community organizations. The questionnaire gathered local perspectives on climate risks, vulnerabilities, adaptation barriers, livelihood challenges, community priorities, social dynamics and adaptation opportunities.

Inputs used to date include:
National authorities: CITMA, relevant climate adaptation and environmental authorities, and the Designated Authority endorsement process.

Sector institutions: MINAL and aquaculture/fisheries counterparts, including available information on cooperatives, productive assets and sector priorities.

Technical and scientific institutions: inputs from ONN (relevant national standards), CITMA, CEAC/REMARCO-linked experts, the Institute of Oceanology, universities and other partners supporting MRV, standards, ecosystem monitoring and coastal resilience — including relevant national standards and regulatory frameworks, and CITMA-led site identification and technical scoping

Policy and programme evidence: Tarea Vida, national and sectoral plans, available site and aquaculture data, and lessons from prior ecosystem-restoration and climate-resilience initiatives in Cuba.

These inputs identified priorities related to coastal protection, water-quality stabilization, reduced climate-related aquaculture losses, ecosystem restoration, local monitoring, safeguards, gender-responsive participation and long-term maintenance of adaptation benefits. They shaped the focus on aquaculture-linked ecosystem restoration, adaptation MRV, locally governed adaptation prioritization, social accountability and O&M continuity.

During the PFG phase, structured consultations will be carried out in Holguín and Las Tunas with provincial and municipal authorities; aquaculture and fisheries cooperatives, UEBs and productive entities; coastal communities in proposed intervention areas; women, youth, low-income households and other vulnerable groups; and relevant community organizations, technical service providers and civil society actors, building on data, feedback and knowledge gathered through surveys and workshops.

The PFG consultations will validate site selection, beneficiary numbers, climate risks, adaptation priorities, safeguards risks, gender barriers, benefit-access criteria, elite-capture mitigation measures, grievance arrangements and the role of Local Adaptation Committees, including whether they will have decision-making, prioritization or advisory functions within the broader safeguards, fiduciary and technical approval framework. Consultations will be accessible, gender-responsive and documented, with sex-disaggregated participation data where feasible. FPIC-aligned procedures will be applied where required by the Adaptation Fund ESP and national context. Issues raised during consultations will be reflected in the full proposal design, ESMP, Gender Action Plan and results framework.

Initial Gender Analysis

Women contribute to aquaculture, fisheries processing, ecosystem stewardship, household livelihood diversification and local resilience in the target coastal areas. At concept stage, the main gender-related barriers identified include:

- Limited participation in cooperative leadership, local planning and climate-related decision-making;
- Lower access to finance, productive assets, equipment and climate-resilient technologies;
- Time burdens and care responsibilities that constrain participation in training and paid activities;
- Weaker access to markets, post-harvest value chains and benefit-sharing opportunities.

The project will address these barriers by prioritizing women's participation in training on MRV, ecosystem monitoring, restoration, climate-resilient aquaculture and post-harvest loss reduction. Local Adaptation Committees and consultation processes will include gender-responsive participation measures so that women and youth can influence adaptation priorities, safeguards monitoring and O&M planning.

At concept stage, 40% of target beneficiaries translate into an indicative 1,200-2,500 women direct beneficiaries within the estimated 3,000-5,000 direct beneficiaries, with final numbers to be validated through sex-disaggregated beneficiary mapping during the PFG/full proposal stage. Selection criteria will explicitly prioritize women-headed households, women involved in processing, vending, ecosystem stewardship and local monitoring, low-income households, youth and other vulnerable groups, while public disclosure of eligibility criteria, grievance channels and social-audit feedback will reduce risks of elite capture.

Targeted measures will go beyond general inclusion: the project will apply sex-disaggregated baselines and indicators; schedule consultations and training at times and locations accessible to women; set minimum participation targets for women in training, local monitoring and governance; support women-led or women-benefiting activities in post-harvest handling, ecosystem restoration nurseries,

community monitoring, O&M services and climate-resilient value-chain roles; and track whether women actually access equipment, paid work, technical certification, decision-making roles and adaptation-investment benefits.

At concept stage the project sets provisional participation targets of at least 40–50% women and approximately 30% youth. These are blended equity-uplift targets across the project's beneficiary groups, reflecting the Adaptation Fund Gender Policy's expectation of gender-responsive thresholds together with the available evidence for each group: (i) the aquaculture/fisheries workforce – Ministry of the Food Industry (MINAL) / OSDE Pesca (Grupo Empresarial de la Industria Pesquera) enterprise records and national fisheries-sector data from the Oficina Nacional de Estadística e Información ; (ii) community members in ecosystem restoration and monitoring work – the documented participation experience of the AF-financed Manglar Vivo ecosystem-based adaptation project in Artemisa and Mayabeque (see below); and (iii) female participation in Cuban technical, scientific and governance roles – Cuba's Programa Nacional para el Adelanto de las Mujeres (Decreto Presidencial 198/2021) . The exact site-specific, sex- and age-disaggregated data for the candidate UEB sites and municipalities (Annex I) are being obtained from OSDE Pesca; the targets are therefore provisional and will be confirmed or adjusted at PFG stage through beneficiary mapping and the site-specific gender analysis. The 40–50% women's participation target is consistent with the demonstrated precedent of the AF-financed Manglar Vivo project, which set a 45% female-beneficiary target that was exceeded by project end, with women representing 48% of direct and 50% of indirect beneficiaries (Terminal Evaluation, 2020) . Published age-disaggregated employment statistics for the aquaculture/fisheries sector in the target provinces are not yet available; the approximately 30% youth target is an indicative equity-uplift threshold rather than a statistically derived figure, informed by the youth out-migration and employment pressures in coastal Holguín and Las Tunas described in Part I. Consistent with the treatment of other indicative concept-stage parameters, this target is provisional and will be confirmed or adjusted at PFG stage once age-disaggregated data are obtained from OSDE Pesca and the Oficina Nacional de Estadística e Información through the beneficiary mapping exercise.

A full gender analysis, sex-disaggregated indicators and a Gender Action Plan will be prepared during the fully developed proposal stage, in line with the Adaptation Fund Gender Policy

Initial Gender Analysis

Women contribute to aquaculture, fisheries processing, ecosystem stewardship, household livelihood diversification and local resilience in the target coastal areas. At concept stage, the main gender-related barriers identified include:

- Limited participation in cooperative leadership, local planning and climate-related decision-making;
- Lower access to finance, productive assets, equipment and climate-resilient technologies;
- Time burdens and care responsibilities that constrain participation in training and paid activities;
- Weaker access to markets, post-harvest value chains and benefit-sharing opportunities.

The project will address these barriers by prioritizing women's participation in training on MRV, ecosystem monitoring, restoration, climate-resilient aquaculture and post-harvest loss reduction. Local Adaptation Committees and consultation processes will include gender-responsive participation measures so that women and youth can influence adaptation priorities, safeguards monitoring and O&M planning.

At concept stage, 40% of target beneficiaries translate into an indicative 1,200-2,500 women direct beneficiaries within the estimated 3,000-5,000 direct beneficiaries, with final numbers to be validated through sex-disaggregated beneficiary mapping during the PFG/full proposal stage. Selection criteria will explicitly prioritize women-headed households, women involved in processing, vending, ecosystem stewardship and local monitoring, low-income households, youth and other vulnerable groups, while public disclosure of eligibility criteria, grievance channels and social-audit feedback will reduce risks of elite capture.

Targeted measures will go beyond general inclusion: the project will apply sex-disaggregated baselines and indicators; schedule consultations and training at times and locations accessible to women; set minimum participation targets for women in training, local monitoring and governance; support women-led or women-benefiting activities in post-harvest handling, ecosystem restoration nurseries, community monitoring, O&M services and climate-resilient value-chain roles; and track whether women actually access equipment, paid work, technical certification, decision-making roles and adaptation-investment benefits.

At concept stage the project sets provisional participation targets of at least 40–50% women and approximately 30% youth. These are blended equity-uplift targets across the project's beneficiary groups, reflecting the Adaptation Fund Gender Policy's expectation of gender-responsive thresholds together with the available evidence for each group: (i) the aquaculture/fisheries workforce – Ministry of the Food Industry (MINAL) / OSDE Pesca (Grupo Empresarial de la Industria Pesquera) enterprise records and national fisheries-sector data from the Oficina Nacional de Estadística e Información ; (ii) community members in ecosystem restoration and monitoring work – the documented participation experience of the AF-financed Manglar Vivo ecosystem-based adaptation project in Artemisa and Mayabeque (see below); and (iii) female participation in Cuban technical, scientific and governance roles – Cuba's Programa Nacional para el Adelanto de las Mujeres (Decreto Presidencial 198/2021) . The exact site-specific, sex- and age-disaggregated data for the candidate UEB sites and municipalities (Annex I) are being obtained from OSDE Pesca; the targets are therefore provisional and will be confirmed or adjusted at PFG stage through beneficiary mapping and the site-specific gender analysis. The 40–50% women's participation target is consistent with the demonstrated precedent of the AF-financed Manglar Vivo project, which set a 45% female-beneficiary target that was exceeded by project end, with women representing 48% of direct and 50% of indirect beneficiaries (Terminal Evaluation, 2020) . Published age-disaggregated employment statistics for the aquaculture/fisheries sector in the target provinces are not yet available; the approximately 30% youth target is an indicative equity-uplift threshold rather than a statistically derived figure, informed by the youth out-migration and employment pressures in coastal Holguín and Las Tunas described in Part I. Consistent with the treatment of other indicative concept-stage parameters, this target is provisional and will be confirmed or adjusted at PFG

stage once age-disaggregated data are obtained from OSDE Pesca and the Oficina Nacional de Estadística e Información through the beneficiary mapping exercise.

A full gender analysis, sex-disaggregated indicators and a Gender Action Plan will be prepared during the fully developed proposal stage, in line with the Adaptation Fund Gender Policy