



ADAPTATION FUND

AFB/PPRC.38/Inf.32
25 September 2026

Adaptation Fund Board
Project and Programme Review Committee
Thirty-eighth Meeting
Bonn, Germany, 19-23 October 2026

PROPOSAL FOR CUBA



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT
TECHNICAL REVIEW OF PROJECT PROPOSAL FOR
"CLIMATE SMART AQUACULTURE SYSTEMS AND RESILIENT BLUE FOOD INDUSTRIES"

Project Title Climate Smart aquaculture systems and resilient blue food industries

Project ID AF00000534

Category Regular size project (over \$1 million)

Type Single country project

Stage Concept

Country Cuba

Implementing Entity UNIDO

Financing Requested USD 3,900,000.00

Reviewer Una May Gordon

Co-reviewer(s)

IE Contact Person

Alejandro Rivera Rojas,Fatou Haidara,Ganna Onysko,Mark Grigoryan,Natale Guarnaccia,Olga Gordiievskia,Rebeca Gallardo Gomez,Tangeni Haimbala

Secretariat's Overall Comment

The initial technical review raises several issues such as the Theory of Change, the Outputs, Outcomes and Activities, Benefits, Sustainability, Alignment with the AF Results Framework, incomplete budget figures, and many others as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review raises several issues such as the Theory of Change, Activities and Output and Outcome statements, Knowledge Management and Learning, Budget and many others as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review

Country Eligibility

Is the country party to the Kyoto Protocol, or the Paris Agreement?

Response: Yes

Secretariat: N/A

Is the country a developing country particularly vulnerable to the adverse effects of climate change?

Response: Yes

Secretariat: Yes. The country is vulnerable to the adverse effects of climate change through rising temperatures, changing rainfall patterns (drier wet seasons and more frequent/prolonged droughts), sea level rise (saline intrusion) and increased frequency of severe weather events (hurricanes, storm surges, extreme rainfall and coastal flooding). These changes result in increased aridity and decreased freshwater availability impacting the agriculture and aquaculture sectors. TR1_ June 5 2026

Project Eligibility

Has the designated government authority for the Adaptation Fund endorsed the project/programme?

Response: Yes

Secretariat: Yes. As per the Endorsement letter dated November 12, 2025. TR1_ 5 Jun 2026

Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?

Response: Pending

Secretariat: The proposal is 47-page long including annexes. CAR1: 1. Please ensure that all tables and figures in the proposal are labelled and sequentially numbered. 2. Please complete the stage of submission section on the cover page of the proposal. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR1: Not Cleared. 1. Cleared. All figures and table labelled and sequentially numbered. 2. Not Cleared. Please complete the following by inserting the date after: "In case of a resubmission, please indicate the last submission date" on the cover page. TR2_ 22 Jul 2026

Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?

Response: Pending

Secretariat: Yes, however additional information is required The project aims to strengthen the climate resilience of aquaculture-dependent communities and blue foods production systems in selected coastal municipalities of Holguin and Las Tunas provinces, Cuba, by reducing their exposure and sensitivity to climate-induced hazards and strengthening adaptative capacity through ecosystem-based approaches, climate-proofed production infrastructure, and inclusive institutional mechanisms, thereby safeguarding food security, livelihoods and ecosystems. Part II A (pp 17 – 19) describes the project/programme components, focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. The Theory of Change is described in paragraph 41 and the Table in paragraph 44 summarizes the Project Components, Outputs and Outcomes and the project component costs. The project has a set of activities suited to contribute to climate resilience, and they align with the list of components. Activities support some of the AF Strategic Objectives (e.g., promote locally based or locally led adaptation) Most of the outputs are implementation-oriented, such as restored ecosystems, operational infrastructure, trained actors, and knowledge systems. The vertical logic between Components, outputs and outcomes is clear especially for Components 1 and 2. However, in Part IIA, the Activities could be better linked to the specific outcomes and outputs. Some outcomes and outcomes are still a bit broad and could be made more specific, tangible and measurable so that there is a better justification for the cost. (E.g. Output 3.3). Also, Outcome 3, currently reads more like a capacity statement than a result statement. Some of the activities are not concrete enough so it is not certain what specific action will be implemented and how it contributes to the overall outcome. For example, upgrading cold-chain infrastructure by purchasing solar-powered cold storage. Mention is also made of selected sites (Activity 1.1) but there is no information of the number of sites nor the criteria which will be used for selection of those sites and by whom. CAR2: Please revise Part II A to ensure the following: 1. The narrative for each Component, clearly states the climate impacts which will be addressed and describes in the activities which will be implemented to address the climate change impacts identified, showing how they lead to substantial tangible outcomes and outputs. 2. The Outcomes and Outputs are expressed in specific, measurable terms to justify the costs. 3. Where mention is made of selected sites, please provide additional information on the selection criteria and the selection process

(i.e. agencies involved in the selection process) CAR3: Please explain further the term 'increasing resilience to climate change' in terms of expected outcomes. E.g. strengthened ability of communities to anticipate, withstand or recover from climate-related shocks and stresses. CAR4: The Theory of Change (ToC) is simple and includes assumptions, but no risks. Missing is also a clear connection between Outputs, Activities, and Risks. Please ensure that ToC is coherent and complete. Please include a diagram of the ToC showing the clear, logical connection between Activities, Outputs, Outcomes and Objectives as well as risks and assumptions. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR2: Not cleared 1. Not cleared:- The narrative in Part II.A for each Component clearly states the climate impacts which will be addressed and describes in the activities which will be implemented to address the climate change impacts identified, showing how they lead to substantial tangible outcomes and outputs. However, the Outputs and Outcomes are missing. See below. 2. Not Cleared. As stated in the previous review, Outcomes and Outputs should be expressed in specific, measurable terms. Please include Outcomes and Outputs in the narrative in Part II. A. 3. Cleared. On Page 19, paragraph 2 in Part II. A highlights the three priority coastal municipalities in the northern coast< an indicative ^ production sites and provides a multi-criteria selection process to determine the final sites which will be identified during the project formulation phase CAR3: Not Cleared Please ensure that the outcomes and outputs are included in the narrative of Part II. A. It currently only includes project activities. CAR4: Not Cleared. The Theory of Change includes the risks and diagram showing the logical connections. However, some statements need to be revisited, especially activities. The words in the ToC should be consistent with Part II. A's description of components. Please revise the wording of the Output statements and Activities to ensure consistency with results-based management terminology as follows: i. In the ToC's diagram 'Activities' should be written as actions (beginning with an action verb). Please amend all activities so these are consistent with Part II.A. ii. For Activities in Part II. A's narrative, please avoid using vague words such as Support in Activity 2.1 and 2.2. State specifically that the project will do. iii. Outputs are products and services (tangible or intangible- delivered or provided) while Outcomes are the first positive results (short to medium term change in a situation). Please ensure Outcomes and Outputs are reflected in Part II.A and ensure consistency with the ToC diagram. TR2_ 22 Jul 2026

Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Pending

Secretariat: Yes, however, additional information is required Part II B (pp 19 – 20) describes how the project/programme provides economic, social and environmental benefits as well as the ways it will avoid and mitigate any negative environmental and social impacts. However, there is very limited information on the quantified estimates of the benefits, or the social impacts particularly among women and vulnerable groups. The target areas where marginalized and the vulnerable communities are located have not been identified neither have the selection process and criteria been described nor is there an explanation on how the project will address the vulnerable communities. CAR6: If the project has to select the target areas where the vulnerable communities are located, it suggests that the project may involve the implementation of Unidentified Sub-Projects (USPs). If that is the case, the exact sites, scope, and technical modalities will only be determined during the inception and early implementation phases and may require detailed baseline and feasibility assessments. Please indicate if this is the case and if so, provide details on how the project will manage the USPs. Please consult Guidance Document for Project/Programme with Unidentified Sub-Projects. CAR7: With respect to Social benefits, it is not clear how the benefit will reach the 40% of the women mentioned in the section "social

Response: Pending

Secretariat: CAR6: Cleared. In Part II. B. (page 23), the proposal clarifies that target communities and beneficiaries will be identified through a two-step process: (i) participatory climate-risk and vulnerability assessments and consultations with producers and community representatives during the project formulation phase; and (ii) confirmation in the fully developed proposal, applying the selection criteria and the agency-led process. CAR7: Not Cleared. The social benefits sub-section only states at least 40% of direct beneficiaries (at least 200 people). Please cross-reference with the measures and process described in the gender sub-section. Note the total persons to benefit should be included under Social benefits. For example, at least 500 people are expected to benefit directly, of which a minimum 40% women (or 200 women) will benefit. Equal participation and benefits will be monitored through [...]. More than 20,000 residents are expected to benefit indirectly. To avoid repetition, please move the fourth paragraph in Part II. B to the social benefits sub-section. CR1: Cleared. As per Part II. B. pages 24-25 and footnote 12, references (Troell et al., 2003; Khanjani et al., 2022), are provided to support the statement "IMTA systems improve water quality and support biodiversity". CAR8: Cleared. In Part II. B (page 25), under the sub-section "Avoidance and mitigation of negative environmental and social impacts" clarification is presented regarding the measures to address the potential risks of the project". CAR9: Not cleared. An initial gender analysis has been included (Part II. B. - pages 26-28 - and in Annex) but it lacks details on opportunities/entry points for equal participation, general gender statistics which help highlight differences and disparities between men, women, in areas such as education, employment, health, income, and political participation, a description of local norms and cultural practices that could shape gender relations in the project. Please ensure the references to the reports are included in footnotes or as in-text citations. TR2_ 22 Jul 2026

Is the project / programme cost effective?

Response: Pending

Secretariat: Yes, however additional information is required Part II C (pp 20 – 21) describes the cost effectiveness of the proposed project, citing the use of existing institutional arrangements and baseline data from earlier initiatives, which lowers startup and transaction costs and avoids duplication. The project's design also generates multiple benefits from the same investment to create economies of scale. The logic explaining cost-effectiveness is clear. However, cost-effectiveness is not demonstrated from a sustainability point of view; it is only demonstrated from an economic point of view. CAR10: Please provide information on how the project demonstrates cost-effectiveness from a sustainability point of view. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR10: Cleared Part II. C. (page 29) reflects cost-effectiveness from a sustainability perspective. CAR10.1 (NEW): The proposal does not provide initial thinking comparing the project interventions to alternative options and some initial reasoning as to why the project interventions are cost-effective. For example, the use of shared cooperative infrastructure versus individual facilities of the use of IMTA vs the regular aquaculture systems. TR2_ 22 Jul 2026

Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?

Response: Pending

Secretariat: Yes, however additional information is required Part II D (pp 21 – 22) describes how the project is consistent with national or sub-national sustainable development strategies. The proposal includes three sustainable development strategies and legal frameworks, but does not include information on sectoral plans and strategies such as those related for food security and the fisheries sector (if they exist). CAR11: Please include clear objectives of the development strategies to better assess if the proposal is consistent with them and how. Please ensure that strategies are clearly distinguished from each other. For example, Tarea Viva is embedded under “National and sub-national sustainable development strategies and legal frameworks”. Please create a table which summarizes the information provided in the Section with the following information i. Name of strategy, years of implementation and hyperlink to document ii. Main objective of strategy iii. Explanation of relevance and alignment of project with strategy TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR11: Not Cleared. As per Part II. D (Table 4), a list of strategies have been identified, and Table 5 outlines the regulatory framework. The main objective of the strategy/plan is stated. For the relevance and project alignment, please strengthen the statement. A suggested structure could be: 'The proposed project is aligned with [Plan XX], under [Specific Action XX], contributing to [Outcome XX].'" CAR 11.1 (NEW): Does Cuba have a draft Adaptation Plan for the Havana Coastal Zone? If so, how is the project aligned to it (whether finalised or draft). TR2_ 22 Jul 2026

Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?

Response: Pending

Secretariat: Yes, however additional information is required The relevant national technical standards are identified, and compliance plans are stated in Part II E, (pg. 22-23), but more specific information is needed. CAR12: Please provide comprehensive, specific information for each identified standard. 1. Please state the scope and relevance. 2. Connect the standard to specific project outputs. Explain the output required to ensure compliance with the standard. 3. Project compliance status. Please provide the steps required for compliance. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR12: Not Cleared. As per Part II. E (Table 6; pages 33-34) presents a list of the standards, their scope and relevance, linkage to project outputs and compliance status. However, please include the competent authority under the compliance section i.e. the entity with the legal power, capacity/expertise, enforce rules and grant permission/issue approval. Please also explain what CICA/CITMA is. TR2_ 22 Jul 2026

Is there duplication of project / programme with other funding sources?

Response: Pending

Secretariat: Yes. however additional information is required A list of potential overlapping projects is included in the proposal in Part II section F (pg. 23). However, this list does not include some of the projects mentioned in the Project Background and Context (paragraphs 26 – 36) which provides descriptions of relevant project funded by the GEF, GCF, IFAD and other agencies. Moreover, some clarifications are needed on the information provided

in Section F. The explanation for the lack of duplication is clear, however it is not clear how the projects mentioned in the proposal are complementary to the proposed project. For example, the "Mi Costa" Project focuses on coastal adaptations in the southern provinces of Granma and Cienfuegos. However, the current project focuses on the eastern provinces of Holguin and Las Tunas. If there are linkages and synergies, they have to be explained. CAR13: Please prepare a table which provides the following information for each of the projects: 1. Project name and funding source 2. Scope (spatial/temporal), 3. Budget 4. Short description - including objectives and focus 5. Areas of overlap or not, explain 6. Complementarity, synergies with the proposed project 7. Lessons learned 8. Considerations for design or non duplication TR1_ 5 Jun 2026

Response: Not Cleared

Secretariat: CAR13: Cleared. As per Part II. F (pages 36-39), a comprehensive table (Table 7) is provided to clarify there are no duplicated efforts and how the project complements previous initiatives. CAR13.1 (NEW): Please provide the duration of the projects under the first column (i.e. project period: xx to xx or xx – on-going) TR2_ 22 Jul 2026

Does the project / programme have a learning and knowledge management component to capture and feedback lessons?

Response: Pending

Secretariat: Yes, however additional information is required Part II G, (pg. 23-24) describes the learning and knowledge management aspects of the project. The proposal includes a learning and knowledge management component (component 3, pg. 15) and a series of activities to implement it (pg. 18-19). However, the description of the activities is not concrete enough (see CAR2 and CAR3). CR2: Please clarify if section G relates only to component 3 or do the other two components include knowledge management activities. CAR14: Please provide more detailed information about knowledge management (KM) activities i. More detailed and concrete information on the activities, institutions involved, and objectives. ii. Institution tracking experience and lessons learned, methodology, and timing. With respect to tracking of experiences, also include information on whether and how experiences gained will be analyzed to enrich global, national and local knowledge on climate change adaptation and to accelerate understanding about what kinds of interventions work iii. How will the knowledge gained through the project be made available after the project concludes? TR1_ 5 Jun 2026

Response: Pending

Secretariat: CR2: Cleared Part II.G relates to Component 3 which capture, systematises and disseminates lessons from Component 1 and 2. CAR14: Not fully Cleared. The revised Knowledge Management and Learning section addresses the gaps. i. Cleared. Part II. G. (page 40, para. 1) states the aim of KM under the project, the concrete activities such as learning logs, after-action reviews and case studies (citing the activities in Part II.A). ii. Not cleared. The Project Management Unit (PMU) will be responsible for KM with support from other partners. All of which will participate in tracking and validation. However, please specify if a Knowledge Management Specialist or M&E Specialist will be an individual who will coordinate these efforts by the PMU. Please also specify the frequency of which activities will occur and knowledge products will be produced will be done (annually, quarterly etc). iii. Cleared. As per Part II. G (page 41), the project notes that knowledge and tools will be embedded in curricula of vocational schools and training institutes and CITMA/MINAL systems. In addition, an online repository will be developed and hosted by a designated national institution. TR2_ 22 Jul 2026

Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender

Policy of the Fund?

Response: Pending

Secretariat: Yes However, additional information is required. Part II H (pg. 24-25) and Annex 1 (pg. 37-47) describe the consultative process. An initial consultation took place with key stakeholders to identify needs and the rights and priorities of marginalized groups. The consultations considered gender. However, additional information is required: CAR15: Please clarify how women's priorities were concretely reflected in the proposal. CR3: Marginalized groups in Cuba include Afro-descendants Peoples. Please ensure the proposal includes consultation and incorporates their needs and priorities. Based on the few forms shared in Annex 1, and pictures, Afro descendants constituted a minority of the people consulted. CAR16: Please include a table which provides the following specific information on consultation meetings to assess the inclusion of key stakeholders and marginalized groups: 1. Participants attending workshops by organization, gender, and ethnic group 2. Concerns and how these concerns were addressed in the proposal 3. Include names of community leaders involved in high-level planning/decision-making to ensure inclusive participation 4. Specify if these leaders attended stakeholder consultations 5. Participation of organizations with a gender remit TR1_5 Jun 2026

Response: Pending

Secretariat: CAR15: The concerns raised by women and how these are addressed in the proposal are acknowledged in Part II. H (Table 9; pages 43-44). CR3: Not Cleared Please explicitly state how the needs and concerns were addressed in the proposal. CAR16: Cleared. 1. Cleared. Part II. H (Table 8, page 42) presents the participants attending each consultation event, disaggregated by gender, ethnicity and organisation. 2. Cleared. Part II. H (Table 9; pages 43-44) highlights the concerns or priorities raised by a group and how the proposal addresses those concerns. 3. Cleared. Part II. H (Table 10; page 44) highlights the community leaders involved in high-level planning/decision-making to ensure inclusiveness 4. Cleared. As noted in column 3 of Table 10 (page 44), all leaders were engaged; some participated in surveys and some in the consultations. 5. Cleared. As per Part II. H. (Table 11; page 45) highlights the organisations with gender remit which were consulted. CR (NEW): Has the government agency with the gender remit been consulted? If so, please clarify. If not, please ensure engagement during the proposal development process. TR2_ 22 Jul 2026

Is the requested financing justified on the basis of full cost of adaptation reasoning?

Response: Pending

Secretariat: Yes, however further information is required. See Part II I (pg. 21-22) The proposal explains why the project is relevant to addressing adaptation objectives; however, the reasoning is not supported by the information provided. CR4: Please explain how the funds requested by activities will be able to deliver on their objectives with the resources provided by the AF. Please include the cost per output. CAR17: Please clarify whether any co-financing is required and whether the project could achieve its objectives regardless of the success of other projects. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CR4: Not Cleared. The cost per output is included in Table 1 but must be shifted under the column labelled Amount (US\$). Please indicate at the end of the last paragraph in Part II. J that the full proposal will provide a more detailed component level explanation of the baseline, adaptation gap and response, expected benefits and the cost justification. CAR17: Not Cleared. Please clarify Part II. J of the proposal whether co-financing is required and whether the project could achieve its objectives regardless of the success of other projects. Note if no co-financing is required. Please revise the introductory statement. A suggested example is as

follows: The Adaptation Funds-financed activities are expected to successfully deliver the proposed outputs and outcomes independently, without reliance on co-financing or parallel initiatives. TR2_ 22 Jul 2026

Is the project / program aligned with AF's results framework?

Response: Pending

Secretariat: Yes, however some adjustment is needed The table in Part III (pp). 31-33 presents the Alignment with the AF's results framework. However, the table needs to be adjusted using the guidelines set out in Results Framework Alignment Table (Amended in December 2025) (77 kB, DOC) Specifically: 1. Outcome Indicators 2.1, 4.1 and 6.1 and Output Indicators 4.1.1, 6.1.1 and 2.1.1 in the proposal do not coincide with the corresponding Fund Outcome and Output Indicators in the guidelines. 2. The Grant amount in the upper part of the table should coincide with the total amounts of the three Components cost in the lower part of the table, not the Total Funds requested CAR18: Please adjust the table as follows: 1. Ensure the Outcome and Output Indicators in the upper and lower parts of the table are the same as the corresponding indicators in the guidelines. E.g. Outcome Indicator 2.1 should be: Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased. Likewise Output Indicator 4.1.1. should be: No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale) 2. Please change the grant amount in the upper part of the table to: USD 3,409,631 which is the sum of USD 1,811,331 + 1,385,200 + 213,100. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CAR18: Not Cleared. 1. The Outcome and Output Indicators in the upper and lower levels of the table are the same as the corresponding indicators in the guidelines. However, please ensure the indicators in the lower level are in the same order as those above. Also please note that the guidance have been updated so please utilize updated outcome, outputs and indicators of SRF. 2. The Grant amount in the upper level is the same as that in the lower level (totalling 3,393,504 excluding IE and EE fees). However please include the row 'Total outcome level grant amount' and also a row for the 'Total outcome level grant amount. Updated guidance available at: <https://www.adaptation-fund.org/document/alignment-with-adaptation-fund-results-framework-template-and-guidance-dec-2025/> TR2_ 22 Jul 2026

Has the sustainability of the project/programme outcomes been taken into account when designing the project?

Response: Pending

Secretariat: Yes, however, some clarifications are required. Part II J (page 26) explains that sustainability has been embedded in all components by institutionalizing climate-resilient practices, ensuring economic viability, strengthening ecosystem resilience, and mobilizing innovative finance, thereby creating diversified incomes, strengthened institutions, and market access that enable communities to maintain and replicate adaptation measures. However, some aspects of sustainability were not adequately explained and other aspects were not mentioned. CAR19: 1. Please explain how social sustainability will be achieved, particularly from the perspective of social equity and inclusion beyond general capacity building: there's no clear focus on gender equality, Indigenous/local community rights, labor standards, fair wages etc. 2. Please explain the project's economic sustainability and how it will be achieved. 3. Ecological sustainability explained. Please explain how it will be sustained over time after the project ends. 4. Please clarify, if possible, how the coordination with the initiatives mentioned will be maintained over time. 5. Institutional sustainability is not addressed. TR1_ 5 Jun 2026

Response: Cleared

Secretariat: CAR19: Cleared. 1. Cleared. As per Part II. J, (page 48) the proposal explains economic sustainability through reduced operating costs, increased productivity, revenue generation and market access. 2. Cleared. As per Part II. J, (page 48) Ecological or Environmental sustainability will be maintained through local stewardship arrangements and institutional participation. 3. Cleared. Institutional sustainability is highlighted as paragraph 5 in Part II . J (pages 48-49). 4. Cleared. Paragraph 6 in Part II. J (page 48) reflects the coordination with initiatives. TR2_ 22 Jul 2026

Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?

Response: Pending

Secretariat: Yes, however, additional information is required. The table in Part II K (pp 26 – 29) identifies potential impacts/risks for all 15 ESP principles, along with mitigation measures. However, the category in which the screening process has classified the project/programme. (Category A, B or C), was not stated. In addition, although the risks have been identified, the level of risk (low, medium or high) is not indicated in the table. CAR20: Please note that Principles 1, 4 and 6 always apply as continuous monitoring is expected of these principles. Thus, the Checklist should be reflect this. CAR21: 1. Please state the Category (A, B or C) in which the screening process has classified the proposal. 2. Please include for each Principle in the checklist, the level of risk (low, medium or high) 3. For ESP Marginalized and Vulnerable Group, please identify the specific group that the project plans to address CAR22: There is no initial gender assessment, however a consultative process was conducted. Please include qualitative and quantitative data, if possible, for gender roles, activities, needs, and available opportunities and challenges or risks for men and women in the initial gender assessment which will be re-submitted with the proposal Tr1_ 5 Jun 2026

Response: Pending

Secretariat: CAR21: Cleared. 1. Cleared. As per Part II. K (page 49), the project is classified as a Category B. 2. Cleared. The risk level of each Principle has been identified as per Part II. K (pages 50-52). 3. Cleared. The sector of the vulnerable groups (remote coastal communities) have been specified as per Part II. K (page 50) CAR21.1 (NEW): Please address the following: i. specify why these groups would be excluded and indicate if these are primarily women. ii. clarify why the E&S Principle - Conservation of Biological Diversity is considered a Medium risk yet “No further assessment is required” was selected. Please strengthen the justification. iii. as Part II.B “Avoidance and mitigation of negative environmental and social impacts: “ mentions some risks, please ensure the risks and mitigation measures are also consistent with the E&S Principle on Pollution and vice versa. iv. In the introductory paragraph, please include a statement that the project will be in line with AF’s E&S and Gender Policy. CAR22: Not Cleared. The Annex: Gender Analysis (page 26 -27) reflects some sectoral level data for women in aquaculture and fisheries. However please note that an initial gender analysis should also examine: i. differences in the roles, needs, capabilities, access to and knowledge of resources among women and men and ii. identify how changing gender dynamics could support lasting change, including the local norms and cultural practices shaping gender relations in the project/program area. iii. assess differentiated impacts and gender-related risks associated with the proposed activities. iv. Please include references for all data and information presented in the gender -subsection of the proposal, using in-text citations and/or footnotes as appropriate. A more detailed gender analysis and action plan should be undertaken during the proposal development process under the Project Formulation Grant. TR2_22 Jul 2026

Resource Availability

Is the requested project / programme funding within the cap of the country?

Response: Cleared

Secretariat: Yes TR1_ 5 Jun 2026

Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?

Response: Pending

Secretariat: Yes, however, some clarifications are required. The implementing Entity Fee is at 8.5%. PFG is requested: the amount requested is correct for the size of the project (USD 100,000), and the implementation fee is below 8.5% CR5: Please update the PFG form timelines. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CR5: Cleared. The PFG timelines have been revised to January 2027 – October 2027. TR2_ 22 Jul 2026

Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?

Response: Pending

Secretariat: Yes. however, some clarifications are required The Implementing Entity (UNIDO) is acting as the Execution Entity for some of the outputs. The Project Components and Financing table identifies the Outputs which will be delivered by the respective Executing Entities (UNIDO and FC-IRIS) after each Output. The Project Execution Cost in the Project Components and Financing table also shows the distribution of the EE fees between the two entities. The values were calculated using the IE and EE calculator which is included among the documents submitted. CR6: Although, the breakdown of the IE and EE fees are not required at this stage, please note that if UNIDO is serving as IE and receiving 1.5% of the EE costs then the balance from the total EC costs to the other executing entities should not exceed 8%. Please amend accordingly. fee CR7: Please see Note1. The proposal does not include a budget at the level of each Output. Please provide a budget per output. CR8: Please include a footnote to the Project Components and Financing Table which refers to the Excel file with the calculations to clarify how the figures were derived. CAR23: 1. Please round up the EE or IE cost so that the total requested coincides with the amount of Financing Requested on the cover page of the proposal. 2. Calculation of output costs is included in the IE-EE calculation Excel sheets but not in the proposal. Please include this information in the proposal. Calculation of EE and IE costs is unclear without this information in the proposal. TR1_ 5 Jun 2026

Response: Pending

Secretariat: CR6: Cleared As per Part I.A (pages 16-18), the Component table (Table 1) reflects the EE fees whereby the IE will receive 1.5% and the remaining EEs receive 8%. CR7: Not Cleared. Please revise the Components and Financing table (Table 1) by listing each output in a separate row and indicating the corresponding output cost in the Amount (US\$) column. CR7.1 (NEW): Note the terminal evaluation occurs 9 months after project closure. Please amend Project Calendar accordingly. CR8: Cleared. As per Part I. A (page 18), a note has been placed below the Project Components and Financing Table referring to the Excel file with calculations to justify how the figures were derived. CAR23: Not Cleared. 1. Cleared. The EE or IE cost have been rounded up so the total amount is consistent with the amount on the cover page. 2. Not Cleared. As requested in CR7, please revise the Components and Financing table by listing each output in a separate row and indicating the corresponding output cost in the Amount (US\$) column. TR2_ 22 Jul 2026

Eligibility of IE

Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?

Response: Cleared

Secretariat: Yes. As per B.46/9. TR1_ 5 Jun 2026



CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Climate Smart aquaculture systems and resilient blue food industries

Country: Cuba

Thematic Focal Area: Food security

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: United Nations Industrial Development Organization (UNIDO)

Executing Entities: Fundación Climática IRIS, Unidos por el Clima (FC IRIS)
UNIDO

Amount of Financing Requested: 3,900,000 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☒ No ☐

Amount of Requested financing for PFG: 100,000 (in U.S Dollars Equivalent)

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: <https://www.adaptation-fund.org/apply-funding/designated-authorities>

Stage of Submission:

- ☒ This concept has been submitted before
- ☐ This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: 7/9/2026

Please note that concept note documents should not exceed 50 pages, including annexes.

Project/Programme Background and Context:

1. Cuba is a Small Island Developing State (SIDS) located in the Caribbean, with over

5,700 km of coastline and home to approximately 9,748,007 inhabitants (Demographic Annuary, ONEI, 2024). The country has 15 provinces and 168 municipalities. Of the latter, 92 are coastal municipalities, representing 54.8% of the total. The island is characterized by three major mountain ranges, located in the western, central, and eastern regions, which intersect 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, 2019; WB, 2020).

2. Cuba's economy is predominantly service-oriented¹, with the services sector accounting for approximately 75% of national GDP, followed by industry at around 24%, and agriculture contributing less than 1% despite employing nearly 17% of the labor force.
3. Cuba ranks among the most climate-vulnerable SIDS, highly susceptible to escalating climate hazards due to its geographic location, island topography, and economic dependence on natural resources and socioeconomic context. Cuba has experienced a significant warming trend, with a national average temperature rise of approximately 0.9°C since the mid-20th century. National projections indicate a further increase exceeding 1.0°C by 2030 and 3.5°C by 2070 relative to the 1961–1990 baseline (NDC 3.0, Ministry of Science, Technology and Environment - CITMA, 2025). Rainfall is projected to decline by approximately 10% during the wet season, while sea levels are expected to rise by 29.3 cm by 2050 and 95.0 cm by 2100. These trends intensify evaporation rates and are directly linked to increased aridity and saline intrusion, particularly affecting agricultural sectors, freshwater availability, and coastal aquaculture systems.
4. Major recent storm events also underscore Cuba's vulnerability. 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 fatalities². 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 billion³. 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 disruption⁴. More recently, Hurricane Melissa (Category 3) made landfall in eastern Cuba on October 29, 2025, impacting primarily the provinces of Granma, Santiago de Cuba, Holguín and Guantánamo, and causing extensive rainfall, coastal flooding, and damage to housing and critical infrastructure.
5. Climate change has disrupted rain patterns, leading to delayed onset of rainy

¹ Cuba - GDP distribution across economic sectors 2022| Statista

² 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

³ Reuters, 2025 <https://www.reuters.com/world/americas/cuba-left-without-electricity-after-hit-hurricane-rafael-2024-11-07/>

⁴ El País, 2024 <https://elpais.com/america/2024-11-10/sismos-de-hasta-68-de-magnitud-dejan-danos-en-el-orient-de-cuba.html>

seasons, longer, more intense dry spells and increased rainfall irregularity. For instance, 94% of Cuba's territory was experiencing rainfall deficits at the close of February 2023 (UNDP, 2023), while less than 4 months later, in June 2023, eastern and central Cuba were struck by heavy rains and damaging floods. This major natural disaster contributed to significant agricultural losses, water supply stress, and hydropower deficits. Recent climate projections anticipate a continued decline in annual rainfall of up to 10–20% by 2050, particularly in the eastern provinces, alongside an increased frequency of meteorological droughts. This trend threatens water security, food production, and rural livelihoods, particularly in provinces such as Las Tunas, which are historically more arid and more exposed to hydrological stress (INSMET, 2020; FAO, 2022; IPCC AR6, 2021).

6. Climate change has intensified the vulnerability of Cuba's economy and its food industry, with extreme hydrometeorological phenomena already affecting agriculture and fisheries⁵. These sectors represent not only key sources of employment and livelihoods but also the backbone of national food security. Agricultural output has not kept pace with national needs, leaving Cuba highly dependent on food imports. In 2023, the country imported food valued at approximately USD 2,165 million (ONEI). Domestic agricultural production has faced major challenges, with the agricultural, livestock, hunting, forestry, and fishing sectors seeing successive GDP declines of 22.9% in 2020 and 13.2% in 2021 (ECLAC, 2023). These trends highlight the fragility of Cuba's food system and the importance of strengthening climate-resilient production. Without targeted adaptation, agricultural productivity in the Caribbean could decline by up to 21% by mid-century (IPCC Sixth Assessment Report, 2021).
7. Climate-change-related challenges are compounded with socio-economic ones stemming from a prolonged economic downturn marked by persistent inflation, low national production volumes, limited access to necessary inputs, poor yields, and minimal diversification. A slow recovery in tourism within a tightened embargo, restrictions, and the global pandemic scenario have further strained access to essential goods and negatively impacted the economy. Coastal communities have been particularly affected by decreasing employment opportunities due to the decline of the fisheries sector, the degradation of productive infrastructure as a result of extreme climatic events and the decrease in tourism. As economic activities contract, rural emigration reduces the available labor force, driving up labor costs and further limiting production, while limited investment and scarce access to finance prevent the adoption of technology to offset these shortages.
8. The Cuban government has launched comprehensive policies to confront climate change. The State Plan to Manage Climate Change (also known as Tarea Vida), launched in 2017 as the country's main national instrument to combat climate impacts and build resilience, outlines five strategic directives and 11 priority actions, such as protecting coastal settlements and ecosystems, ensuring food security, and relocating or redesigning vulnerable infrastructure. The Plan identifies eastern Cuba's dry zones and low-lying coasts (including the provinces of Holguín and Las Tunas) among the top priorities for adaptation⁶.
9. Building on this framework, the updated Nationally Determined Contribution (NDC 3.0, February 2025) reaffirms adaptation as Cuba's primary climate priority "given the

⁵IPCC 6th Assessment Report, [wfp.org/ipcc.ch](https://www.ipcc.ch/).

⁶<https://www.undp.org/sites/g/files/zskgke326/files/migration/cu/79c4375d278252f07bb0c6398685ebbad412c2e4617b714647e83ec4168971a6.pdf>

country's low level of GHG emissions,” and explicitly frames ecosystem-based approaches as the preferred instrument for building coastal resilience. Its Section 3 (Prioritized Adaptation Actions) establishes national commitments directly relevant to this project: adapting fisheries and aquaculture activities to climate-driven changes in land use and drought; reducing the extent of coastal agricultural and aquaculture areas affected by saline intrusion; protecting and restoring mangrove ecosystems and other coastal buffers; and safeguarding coastal aquifer quality.

10. The National Program on Biological Diversity (PNDB), envisioning the mission for the period up to 2030 (towards the 2050 Vision), relies on adopting and implementing measures to reduce the loss of Cuban biological diversity, as a significant contribution to national security and the prosperous and sustainable development of the economy and society.
11. The Holguín and Las Tunas provinces lie on Cuba's eastern coast and are characterized by extensive coastal wetlands and aquaculture activities. The region experiences a tropical savanna climate influenced by both the Atlantic Ocean and the Caribbean Sea. The area is a hotspot of climate vulnerability and is marked by distinct wet and dry seasons, coastal exposure to tropical storms, and increasing signs of climate instability.



Figure 1 Map of Cuba provinces

12. Consistent with national trends documented in Cuba's NDC 3.0 (CITMA, 2025) and the First Biennial Transparency Report (IBT, 2024), the eastern provinces are particularly exposed to: increasing frequency of consecutive dry days and prolonged drought cycles; intensification of extreme rainfall events and associated flooding; and accelerated coastal erosion driven by sea-level rise. These hazards directly compound the vulnerability of aquaculture systems in both provinces, exacerbating salinity fluctuations in coastal lagoons, reducing freshwater availability for pond-based systems, and increasing the frequency of storm-related infrastructure damage.
13. Holguín has sheltered bays and estuaries that have a large potential for oyster cultivation and seaweed production. Whilst the sector has a strong potential for scale up to supply both local consumption and high-value markets (proximity to a strong tourism market), the sector faces increasing risks from hurricanes, storm surges, coastal pollution, and ocean warming, all of which threaten production.
14. Las Tunas, with its long shallow coastline and access to the Gulf of Guacanayabo, has significant untapped potential for aquaculture, specifically in community-based

systems. The Gulf itself is one of the most productive marine areas in Cuba, accounting for a large share of the country's platform fisheries and hosts extensive seagrass meadows and mangrove forests that protect coastal farms and serve as key habitats for oysters, queen conch, and other mollusks. However, the province is particularly vulnerable to droughts, salinity fluctuations in lagoons, sedimentation, and ecosystem degradation. While infrastructure and technical capacity remain limited, Las Tunas offers strong opportunities for ecosystem-based aquaculture that contributes to food security, community resilience, and climate adaptation.



Figure 2 Mariculture potential in Cuba⁷

15. Cuba's eastern provinces have the country's lowest development indices and limited resources for adaptation⁸. Both provinces are areas of high socio-economic vulnerability with modest industrial development, and a strong dependence on natural resource-based livelihoods that intersect with fragile ecosystems and increasing climate risks.
16. Holguín and Las Tunas are identified under Cuba's State Plan to Manage Climate Change (Tarea Vida) as high-priority zones due to their combined exposure to extreme hydrometeorological phenomena, and socio-economic vulnerability. Strengthening aquaculture in these regions is therefore both a climate adaptation imperative and a strategic objective to reduce food imports, diversify rural livelihoods, and generate new income streams for vulnerable local communities through value-added and export-oriented aquaculture.
17. Over 70% of Cuba's food is imported, and chronic drought in the east worsens food insecurity⁹. Crop failures from drought in Las Tunas and Holguín have been frequent in the past decade, reducing household income and increasing reliance on imported staples. Farming and coastal communities have obsolete technology and poor access to inputs and financing/credit, which undermines productivity and their adaptive capacity. Anemia and malnutrition rates in children are highest in the eastern region¹⁰, reflecting the fragility of local food systems. Climate change is an added stressor on these rural livelihoods, which is triggering outmigration, reducing

⁷ Chiapetta, F. (2021) Mariculture in Cuba. Challenges and opportunities for mariculture in Cuba and the Caribbean

⁸ <https://www.wfpusa.org/countries/cuba/#:~:text=But%20challenges%20remain,the%20lowest%20in%20the%20country>

⁹ <https://www.wfpusa.org/countries/cuba/#:~:text=But%20challenges%20remain,the%20lowest%20in%20the%20country>

¹⁰ <https://www.wfp.org/stories/cuba-rethinking-farming-face-climate-crisis#:~:text=Evidence%20shows%20that%20regularly%20consuming,along%20with%20the%20capital%20Havana>

local labour availability, and increasing dependence on state support.

18. Cuba's fish production has experienced a marked and sustained decline, rendering domestic supply insufficient to meet population demand. Capture output is around 50% of projected targets, driven mostly by decades of intensive fishing, particularly during periods of economic crisis, combined with equipment breakdowns, energy deficits, infrastructural limitations, and the ineffective implementation of existing regulations. The impacts of overfishing are compounded by climate change, habitat degradation, and pollution, making marine resource recovery even more difficult.
19. Aquaculture activities in Cuba go back to 1920, and in the last decades nearly all farmed activities are managed primarily by state enterprises but increasingly supported by community-based and cooperative initiatives. Currently, aquaculture complements capture fisheries in supplying domestic markets amid high costs of food imports, producing around 30,000–35,000 metric tons annually, mainly from freshwater sources. Freshwater aquaculture is prominent in inland provinces like Sancti Spiritus, Camagüey, Las Tunas, and Villa Clara and mariculture (mostly shrimp) is found along coastal areas, notably in Camaguey, Cienfuegos, Sancti Spiritus, Las Tunas, Holguín, and Granma.
20. Aquaculture is becoming increasingly relevant for Cuba as the country faces mounting challenges related to food security, climate change, and the sustainability of its traditional fisheries. While primary production has a low contribution to national GDP, it still employs a significant portion of the population, particularly in rural and coastal areas where food access can be limited. Recent government initiatives and international partnerships have demonstrated promising results in freshwater fish and shrimp farming, highlighting the sector's potential to contribute to national development.
21. Aquaculture is a critical pillar of food security and holds great potential for livelihoods and economic development in the provinces of Holguín and Las Tunas. The state-own industries in the sector employ 660 workers in Las Tunas, including 151 women, and 113 persons under 35 years of age. Within this total, 141 fishers are engaged in marine wild fishing, 28 in freshwater aquaculture, and 136 people work in the processing industry. In Holguín province, the sector employs 565 workers, including 121 women and 79 persons under 35 years of age. Within this total, 124 fishers are engaged in marine wild fishing, 61 in freshwater aquaculture, and 91 persons work in the processing industry. Participation from women and youth in the smallholder segment is growing, with women-led cooperatives particularly active in processing and sales.
22. The northern coasts of the provinces of Las Tunas and Holguín have sheltered bays and estuaries with significant potential for oyster farming and seaweed production. Although the sector holds strong potential to expand and supply both local consumption and high-value markets, it faces increasing climate risks. A combination of slow-onset (rising temperatures, salinization and droughts) and sudden climate hazards (floods, hurricanes and extreme rainfall events) are significantly destabilizing aquaculture production systems. Climate change is eroding the resilience of coastal and aquaculture-engaged communities.
23. According to Cuba's First Biennial Transparency Report (IBT, 2024), observed climate impacts on aquaculture-relevant sectors include negative changes in the

hydrological regime, reducing freshwater availability for pond-based systems, increased frequency of consecutive dry days, and a sustained rise in extreme hydrometeorological events that damage coastal infrastructure and alter salinity regimes critical for mariculture. In practice, flooding and storm surges regularly damage ponds, hatcheries and cold storage units; prolonged droughts increase salinity, cause pond drying and reduce water availability for freshwater systems; and temperature rise leads to reduced dissolved oxygen, increased fish mortality, disease outbreaks, and reduced yields, altering species composition and favoring invasive species.

24. Although Holguín and Las Tunas are increasingly affected by a range of climate stressors that undermine aquaculture systems, they present distinct potential, challenges and opportunities for the development of climate-resilient, regenerative aquaculture.
25. The full set of climate change evidence registered or recorded in these provinces influences aquatic diseases, thus undermining the sustainability of the aquaculture sector. Rising water temperatures lead to accelerated pathogen growth, weakens aquatic immune systems, and promotes disease outbreaks. Fluctuations in water quality, salinity and availability also impact reservoir species and disease vectors. Monitoring programs to track environmental change and disease emergence in aquaculture are essential to support climate change adaptation by understanding long-term trends and inform management responses.
26. Cuba has an established track record of adaptation programming supported by multilateral climate funds, particularly in ecosystem-based adaptation (EbA). The completed AF-financed Manglar Vivo project and the ongoing Green Climate Fund (GCF)-financed Mi Costa project have built coastal EbA experience, governance arrangements and monitoring systems at scale, while Ecovalor, IRES, AdaptHabana and the Cuba-Panama binational project have strengthened ecosystem valuation, rural resilience, adaptation planning and food-security frameworks. These initiatives, their geographical scope, budgets, areas of overlap and complementarity with the present project are set out in Table 7 (Part II.F). Of particular relevance is the institutional legacy of Manglar Vivo: the coordination mechanisms it established between CITMA, local governments and coastal communities provide the governance architecture on which the present project will build.
27. While these initiatives have built substantial national capacity in coastal EbA, climate risk assessment, ecosystem services valuation and community-based resilience, they do not directly address climate adaptation within productive aquaculture systems in the eastern provinces of Holguín and Las Tunas. Aquaculture-dependent livelihoods remain systematically underrepresented in Cuba's adaptation portfolio, despite their centrality to food security and rural income in these two provinces.
28. The proposed project therefore extends climate adaptation into aquaculture-dependent communities and blue-economy value chains, drawing on the institutional arrangements, governance mechanisms, restored ecosystems and monitoring systems already established under the above projects. Where previous projects restored the ecological and institutional foundations, this project puts them to work in service of climate-resilient aquaculture, food security and coastal livelihoods. It is also deliberately sequenced with UNIDO's pipeline proposal "Innovative Blue-Carbon Finance for Coastal and Aquaculture Resilience in Cuba" (AF Innovation

Programme), which targets the same provinces: the present project generates the rehabilitated ecosystems, resilient production systems and institutional capacities that the pipeline initiative would leverage to access results-based climate finance.

29. Without urgent adaptation interventions, climate change could threaten coastal community's well-being and national food security in Cuba. The FAO and IPCC warn that fisheries and aquaculture-dependent communities are "at the forefront of climate change impacts," requiring proactive adaptation to safeguard livelihoods¹¹.
30. Key adaptation barriers in Holguín and Las Tunas include:
- i. Degraded coastal ecosystems and lack of nature-based protective measures, leading to heightened exposure of fishponds, homes and infrastructure to storms and coastal flooding.
 - ii. Traditional aquaculture practices (monoculture ponds, open-water cages) that are vulnerable to temperature and salinity changes and do not harness potential synergies with nature – there is a need for regenerative practices like integrated multi-trophic aquaculture (IMTA) that improve water quality and resilience.
 - iii. Weak value-chain infrastructure and resource inefficiencies – for example, limited cold storage and processing capacity causes high post-harvest losses, and high volumes of fish waste are discarded rather than recycled and valorized, making communities economically vulnerable and contributing to pollution loads.
 - iv. Limited local capacity and data for climate risk management and leveraging climate finance – coastal cooperatives and authorities lack access to robust climate information, and Cuba is only beginning to build capacity to tap targeted results-based climate finance (e.g. via blue carbon credits, blue bonds, PES, etc.) that would ensure long-term sustainable finance streams for adaptation.
31. These adaptation gaps form the basis for this project's design. The aquaculture sector in Holguín and Las Tunas offers a strategic entry point for climate adaptation investments that strengthen food systems, protect ecosystems, and empower vulnerable populations. Upgrading post-harvest infrastructure, scaling regenerative and integrated systems will contribute towards long-term sustainability and alignment with national priorities. The proposed interventions represent high-impact, cost-effective measures to protect livelihoods, restore ecosystems, and build a climate-resilient blue economy in Cuba.

Project/Programme Objectives:

32. The **Overarching Adaptation Objective** of this project is to strengthen the climate resilience of aquaculture-dependent communities and blue foods production systems in selected coastal municipalities of Holguín and Las Tunas provinces, Cuba, that is, to strengthen their ability to anticipate, withstand and recover from climate-induced hazards (such as rising temperatures, salinization, drought and intensifying extreme hydrometeorological events), by reducing their exposure and sensitivity and by strengthening adaptive capacity through ecosystem-based approaches, climate-proofed production infrastructure, and institutional coordination mechanisms, thereby safeguarding food security, livelihoods and ecosystems.

33. The **Specific Adaptation Objectives** are threefold:

¹¹ <https://www.uncclean.org/wp-content/uploads/library/cb3414en.pdf>

- **SO1:** Reduce the exposure and sensitivity of aquaculture production systems and coastal ecosystems to climate hazards, strengthening their capacity to withstand and recover from climate shocks and stresses.
- **SO2:** Strengthen the adaptive capacity of aquaculture-dependent communities, especially women and youth, to reduce climate-driven post-harvest losses, safeguard food security, and diversify incomes under changing climate conditions.
- **SO3:** Enhance the institutional, knowledge and monitoring systems needed to anticipate climate risks and to plan, coordinate and replicate climate-resilient aquaculture and ecosystem management.

Theory of change:

34. IF climate-smart and regenerative aquaculture systems are established and the coastal ecosystems that protect them are restored and monitored (Activities 1.1-1.6, leading to Outputs 1.1-1.5), THEN aquaculture production systems and their supporting ecosystems will be better able to withstand and recover from climate-related shocks and stresses, with reduced exposure and sensitivity (Outcome 1), contributing to SO1;
35. IF post-harvest and cold-chain infrastructure is made climate-resilient and cooperatives diversify into circular, market-linked blue products with the necessary skills and finance (Activities 2.1-2.4, leading to Outputs 2.1-2.4), THEN post-harvest systems and value chains will reduce climate-driven losses, safeguard food security and diversify incomes, particularly for women and youth (Outcome 2), contributing to SO2;
36. IF multi-stakeholder coordination, knowledge-management and results-based monitoring systems are established and operating (Activities 3.1-3.3, leading to Outputs 3.1-3.3), THEN institutions and communities will be better able to anticipate climate risks and to plan, coordinate and replicate climate-resilient aquaculture and ecosystem management across and beyond the target provinces (Outcome 3), contributing to SO3;
37. THEN, together, these three outcomes will strengthen the ability of aquaculture-dependent communities and blue-food production systems in Holguín and Las Tunas to anticipate, withstand and recover from climate-induced hazards, thereby achieving the project's Overarching Adaptation Objective of safeguarding food security, livelihoods and ecosystems.
38. This change is achievable BECAUSE the three components are mutually reinforcing (resilient production under Component 1 supplies the value chains strengthened under Component 2, while the institutional, knowledge and monitoring systems of Component 3 sustain, scale and replicate both) and BECAUSE the project builds on the ecosystem-restoration experience, governance mechanisms and monitoring tools already established in Cuba through Manglar Vivo, Mi Costa and related initiatives, applying the ecosystem-based adaptation logic to productive aquaculture systems for the first time in the eastern provinces.
39. ASSUMING the political will and institutional engagement from CITMA and the Ministry of the Food Industry (MINAL) are maintained throughout implementation; ASSUMING that aquaculture-dependent communities and cooperatives are willing to adopt the new climate-smart practices and technologies; ASSUMING the governance

frameworks, restored ecosystems and monitoring tools generated by previous adaptation projects remain available to build upon; and ASSUMING the macro-level conditions (national policy stability and access to project sites) remain broadly favourable.

40. The following RISKS could affect the achievement of the expected results:

- There is a risk that an extreme weather event (hurricane, storm surge) damages newly installed production systems or processing infrastructure before adaptation benefits materialize. Mitigation: siting in sheltered bays and estuaries, mangrove and seagrass buffers (Activity 1.3), and off-grid energy systems that maintain operations during and after disruptions (Activity 2.1).
- There is a risk that cooperatives and community members do not adopt the new climate-smart practices and technologies. Mitigation: hands-on training and demonstration (Activities 1.4 and 2.4), prioritization of women- and youth-led groups, and community participation in site selection.
- There is a risk that weak coordination or staff turnover among CITMA, MINAL and provincial authorities slows implementation. Mitigation: the multi-stakeholder coordination mechanism (Activity 3.1) and the National Steering Committee established under the implementation arrangements.
- There is a risk that international banking and procurement constraints affecting Cuba delay the acquisition of specialized equipment. Mitigation: partial execution by UNIDO for international procurement, as set out in the implementation arrangements.
- There is a risk that aquaculture activities introduce non-native species, transfer disease or increase pollution loads. Mitigation: use of native or nationally-approved species, biosecurity protocols, and the Environmental and Social Management Plan (ESMP).

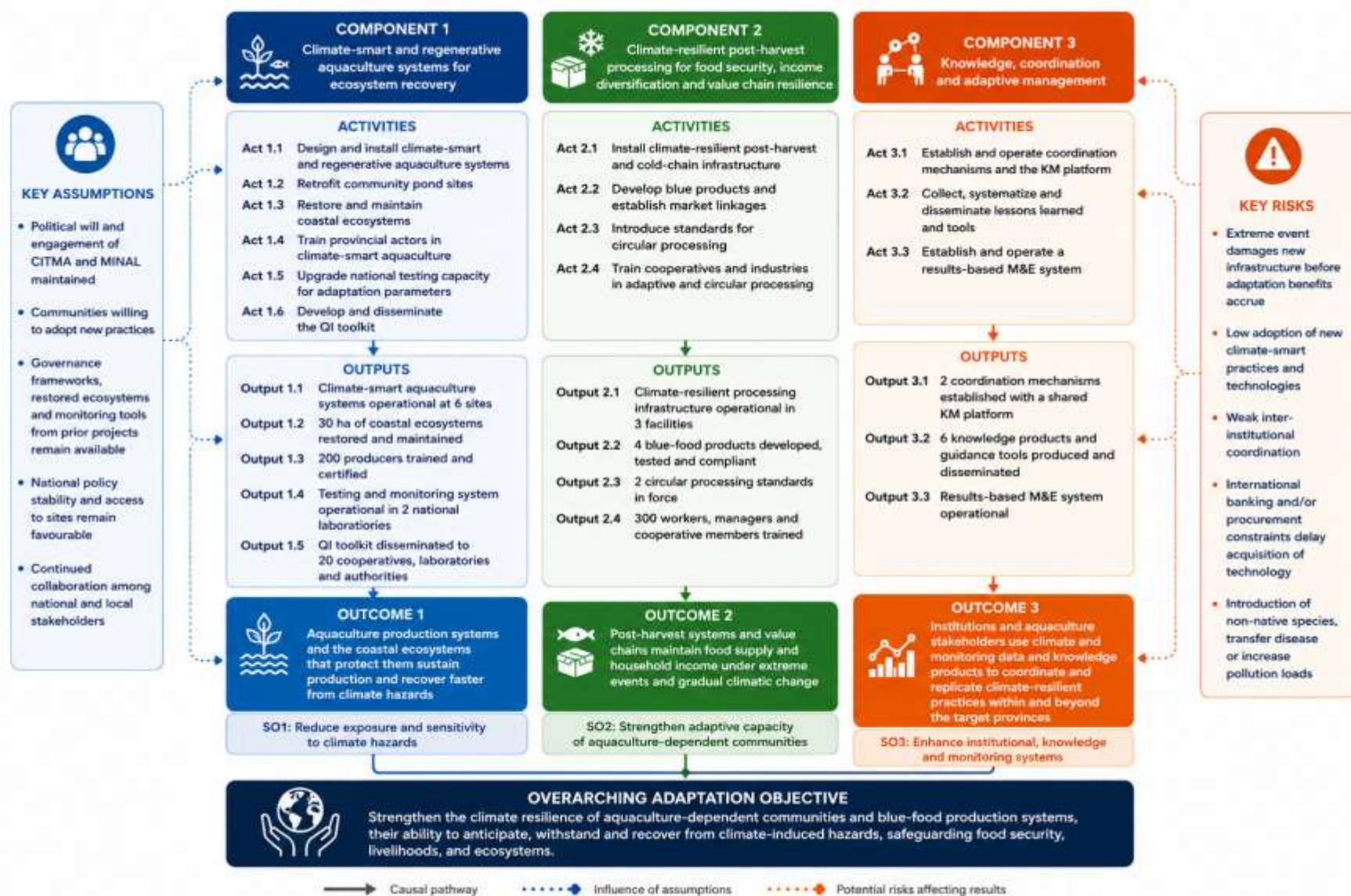


Figure 3 Diagrammatic Theory of Change

Project/Programme Components and Financing:

41. The proposed project delivers an adaptation pathway through three interlinked and mutually reinforcing components. Each component contributes to reducing exposure and sensitivity to climate-induced hazards, strengthening adaptive capacities through climate-smart and ecosystem-based solutions, and reinforcing institutional coordination and knowledge management for long-term sustainability.
42. Together, the components encompass the full spectrum of aquaculture-dependent livelihoods and ecosystems (from production and processing to the natural and institutional systems that sustain them), ensuring an integrated approach that combines technology transfer, capacity development, and institutional strengthening to improve climate adaptation and resilience. The following table summarizes the project components, expected outcomes, outputs and estimated financial requirements.

Table 1 Project Components

Project/Programme Components	Expected Concrete Outputs*	Expected Outcomes	Amount (US\$)
Component 1: Climate-smart and regenerative aquaculture systems for ecosystem recovery This component strengthens the resilience of aquaculture production systems and their supporting coastal ecosystems to key climate hazards: temperature rise, salinization, drought, extreme rainfall, hurricanes and storm surges. It applies proven ecosystem-based and climate-smart aquaculture approaches (such as IMTA) to simultaneously enhance productivity, restore coastal ecosystems and strengthen community adaptive capacity.	Output 1.1: Proven climate-smart and regenerative aquaculture systems established and operational at 6 selected sites (3 coastal/marine systems and 3 retrofitted pond sites) in Holguín and Las Tunas.	Outcome 1: Aquaculture production systems in the target municipalities and the coastal ecosystems that protect them, sustain production and recover faster from climate hazards, with reduced exposure and sensitivity to climate risks.	Output 1.1: 750,000 EE: UNIDO
	Output 1.2: 30 ha of coastal and aquatic ecosystems adjacent to the selected production sites restored and placed under a maintenance regime, agreed with participating cooperatives and municipal authorities.		Output 1.2: 470,000 EE: FC IRIS
	Output 1.3: 200 aquaculture producers and cooperative members, particularly women (≥40%) and youth (≥30%), trained and certified in climate-smart aquaculture practices (e.g. climate-responsive selective breeding, closed-loop systems, feed management, biosafety compliance).		Output 1.3: 300,000 EE: FC IRIS
	Output 1.4: Testing and monitoring system for key adaptation parameters (salinity, pH, dissolved oxygen, temperature) operational in 2 national laboratories.		Output 1.4: 130,000 EE: UNIDO
	Output 1.5: Quality Infrastructure toolkit for climate-smart aquaculture adapted and disseminated to at least 20 cooperatives, laboratories and competent authorities.		Output 1.5: 60,000 EE: UNIDO
Subtotal Component 1			1,710,000

Component 2: Climate-resilient post-harvest processing for food security, income diversification and value chain resilience This component strengthens the resilience of post-harvest aquaculture systems and value chains through climate-smart, resource-efficient processing technologies and circular value addition. It installs adaptive infrastructure and trains aquaculture cooperatives and industries (including women- and youth-led industries) to reduce post-harvest losses, diversify income streams, and develop market-compliant blue-food products. By addressing value chain vulnerabilities to climate shocks, this component directly enhances food security and livelihood resilience.	Output 2.1: Adaptive, climate-resilient post-harvest and cold chain infrastructure installed and operational (including solar-powered cold storage, ice production, drying and insulation technologies) in 3 aquaculture processing facilities.	Outcome 2: Post-harvest systems and aquaculture value chains in the target municipalities maintain food supply and household income under both extreme events and gradual climatic change, with reduced post-harvest losses, diversified incomes, enhanced food security, and expanded market access, particularly for women and youth.	Output 2.1: 700,000 EE: UNIDO
	Output 2.2: 4 marine-based blue-food products (including products derived from by-products and waste streams) developed, tested and compliant with applicable national requirements.		Output 2.2: 310,000 EE: FC IRIS
	Output 2.3: 2 circular processing standards (fish-waste composting, biogas from effluent, water reuse) in force, whether newly developed or adapted from existing standards.		Output 2.3: 180,000 EE: FC IRIS
	Output 2.4: 300 local workers, managers and cooperative members, particularly women (≥40%) and youth (≥30%), trained in adaptive processing, quality management, climate-informed business planning, and access to finance.		Output 2.4: 153,504 EE: FC IRIS
Subtotal Component 2			1,343,504
Component 3: Institutional and knowledge systems for climate-resilient aquaculture and ecosystem management This component strengthens the enabling environment for climate adaptation by enhancing institutional coordination, knowledge management and multi-stakeholder engagement across aquaculture systems and associated ecosystems. It establishes coordination mechanisms to mainstream climate risks into planning and decision-making, ensures systematic capture and dissemination of lessons learned, and facilitates the replication of effective adaptation measures within and beyond the target provinces.	Output 3.1: 2 multi-stakeholder coordination mechanisms (one per province) established in Holguín and Las Tunas, with a shared knowledge management platform.	Outcome 3: Institutions and aquaculture stakeholders use climate and monitoring data and knowledge products to coordinate adaptation actions and to replicate climate-resilient aquaculture and ecosystem management practices within and beyond the target provinces.	Output 3.1: 150,000 EE: FC IRIS
	Output 3.2: 6 knowledge products and guidance tools on climate adaptation in aquaculture and ecosystem management produced and disseminated to relevant national and regional stakeholders.		Output 3.2: 100,000 EE: FC IRIS
	Output 3.3: Results-based monitoring and evaluation system operational.		Output 3.3: 90,000 EE: UNIDO
Subtotal Component 3			340,000
6. Project/Programme Execution cost (9.5%)		200,966 (UNIDO EE fee at 1.5%: 26,345 + FC IRIS EE fee at 8%: 174,621)	

7. Total Project/Programme Cost*	3,594,470 (Activity cost 3,393,504 + EE fees 200,966)
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (8.5%)*	305,530
Amount of Financing Requested	3,900,000

**All targets are indicative, to be confirmed during the project formulation phase.*

Projected Calendar:

Table 2 Calendar for the proposed project

Milestones	Expected Dates
Start of Project/Programme Implementation	Q4 2028
Mid-term Review (if planned)	Q4 2030
Project/Programme Closing	Q4 2032
Terminal Evaluation	Q3 2033

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.

The project components are designed to address interlinked climate risks documented for the target eastern provinces – saline intrusion into coastal lagoons and coastal waters, drought and reduced freshwater availability, rising water temperatures, and storm damage – which threaten local food systems, incomes, livelihoods and ecosystems.

Project activities will be implemented across three priority coastal municipalities in the northern coast (Rafael Freyre in Holguín, and Manatí and Puerto Padre in Las Tunas), selected for their high exposure to climate hazards and their significant aquaculture potential. Within these municipalities, an indicative 6 production sites and the associated 30 ha of ecosystem-restoration areas will be confirmed during the project formulation phase through a documented, multi-criteria selection process. Selection criteria will include: (i) level of exposure and sensitivity to the priority climate hazards (salinization, drought, storm surge); (ii) presence of active aquaculture cooperatives or state enterprises, and of women- and youth-led groups; (iii) presence of degraded coastal ecosystems (mangrove, seagrass, wetland) suitable for restoration that protects production; (iv) community readiness and willingness to adopt new practices; (v) complementarity with sites and data generated by previous/ongoing initiatives; and (vi) accessibility for monitoring and maintenance. The selection process will be led by FC IRIS together with CITMA provincial delegations (coastal-zone and ecosystem criteria), the Grupo Empresarial de la Industria Pesquera (GEIP) under MINAL and the provincial fishing enterprises HOLPES (Holguín) and PESCATUN (Las Tunas) (productive criteria), and the provincial and municipal governments (community and territorial-planning criteria), and validated with participating cooperatives. The final list of sites, with georeferenced data and selection rationale, will be presented in the full proposal.

Component 1 Climate-smart and regenerative aquaculture systems for ecosystem recovery

This component strengthens the resilience of aquaculture production systems and their supporting coastal ecosystems to key climate hazards. It responds directly to:

- salinity fluctuation and saline intrusions that alter the water regimes critical for pond-based and coastal aquaculture systems, by shifting production towards species and systems adapted to these salinity regimes and by establishing testing and monitoring capacity for salinity and water-quality parameters;
- drought and reduced freshwater availability that cause pond drying and water stress, through rainwater harvesting, adaptive water-use practices, and diversification into coastal mariculture that does not depend on freshwater ponds;
- rising temperatures that lower dissolved oxygen and increase physiological stress, fish mortality and susceptibility to disease, through solar-powered aeration that sustains dissolved oxygen and reduces stress-related vulnerability, training in climate-responsive aquaculture practices and by establishing testing and monitoring capacity for dissolved oxygen and temperature; and
- extreme rainfall, hurricanes and storm surges physically damaging farms and coastal ecosystems buffering them, through ecosystem-based restoration of mangroves/seagrass attenuating waves/erosion, siting in sheltered bays/estuaries.

Activity 1.1. Design and install proven climate-smart and regenerative aquaculture systems (such as the Integrated Multi-Trophic Aquaculture (IMTA) model) for climate-resilient farmed species at the selected sites on the northern coasts of Holguín and Las Tunas (oysters on longlines/rafts + nearby seaweed lines ± low-trophic grazers) to enhance productivity and water quality while reducing pressure on wild stocks.

Activity 1.2. Retrofit selected community pond sites, to combat water scarcity and heat stress, through technology transfer and training on climate-adaptive technologies integrating solar energy, ecosystem buffers, and adaptive water-use systems (such as solar-powered aerators, smart feeding systems, rainwater harvesting and digital monitoring tools, quality and biosafety compliance systems).

Activity 1.3 Restore and maintain 30 ha of mangrove, seagrass and coastal wetland adjacent to the selected production sites to provide natural protection against storm surge, wave action and erosion.

Activity 1.4. Train provincial actors in climate-smart aquaculture practices and feed initiatives, climate-responsive selective breeding, closed-loop systems, ecosystem restoration, food safety (ISO 22000) and quality compliance (testing, certification, traceability), risk management, climate-adaptation and circular economy standards (ISO 14090, ISO 59000), cooperative strengthening and governance.

Activity 1.5. Upgrade national testing capacity for key adaptation parameters (water salinity, pH, dissolved oxygen, and temperature) for accurate and real-time measurement to enable adaptive management, including the adoption of monitoring protocols and the training of laboratory technicians in their application.

Activity 1.6. Develop and disseminate a Quality Infrastructure toolkit for climate-smart and regenerative aquaculture, translating quality infrastructure principles (standards, metrology, conformity assessment, accreditation) into practical tools for farmers, laboratories, competent authorities and policymakers.

Together, these activities deliver five Outputs. Activities 1.1 and 1.2 install and bring into operation climate-smart and regenerative aquaculture systems at 6 selected sites in Holguín and Las Tunas (**Output 1.1**). Activity 1.3 restores 30 ha of coastal and aquatic ecosystems adjacent to those production sites and places them under a maintenance regime agreed with participating cooperatives and municipal authorities, so that the

natural barrier protecting the sites is itself sustained beyond the restoration works (**Output 1.2**). Activity 1.4 trains and certifies 200 aquaculture producers and cooperative members, particularly women ($\geq 40\%$) and youth ($\geq 30\%$), in climate-smart aquaculture practices (**Output 1.3**). Activity 1.5 makes operational a testing and monitoring system for the key adaptation parameters in 2 national laboratories, combining upgraded testing facilities, adopted monitoring protocols and trained laboratory technicians (**Output 1.4**). Finally, Activity 1.6 adapts and disseminates a Quality Infrastructure toolkit for climate-smart aquaculture to at least 20 cooperatives, laboratories and authorities (**Output 1.5**).

These Outputs produce **Outcome 1**: aquaculture production systems in the target municipalities, and the coastal ecosystems that protect them, sustain production and recover faster from climate hazards, with reduced exposure and sensitivity to climate risks. Systems designed for observed salinity, temperature and water regimes keep producing under conditions that today cause losses; restored ecosystems buffer storm surge and shorten recovery times; trained producers operate the systems, converting installed assets into sustained performance; and the quality testing and monitoring system and toolkit allow early detection of parameter shifts and corrective action before losses occur. Component 1 contributes to **Specific Objective 1**. All targets are indicative, to be confirmed during the project formulation phase.

Component 2: Climate-resilient post-harvest processing for food security, income diversification and value chain resilience

This component strengthens the resilience of post-harvest aquaculture systems and value chains to climate shocks. It responds directly to:

- extreme heat and humidity that accelerate spoilage and drive post-harvest losses, through passive ventilation and insulation, solar-powered cold storage, ice production, cold rooms, and drying technologies that preserve product quality;
- storm- and climate-driven energy/water supply disruptions that break the cold chain and interrupt processing, through renewable, modular, off-grid energy and water-management systems that keep facilities active during/after extreme events; and
- the income volatility and food insecurity that climate shocks impose on aquaculture-dependent households, by strengthening adaptive capacity through circular value addition that converts by-products and waste streams into marketable products, diversifies income, reduces dependency on imported inputs, and secures new market linkages with tourism operators, retail buyers, and public institutions, particularly for women- and youth-led enterprises.

Activity 2.1. Install adaptive, climate-resilient post-harvest and cold-chain infrastructure within the existing primary aquaculture processing facilities of the target municipalities, including: renewable, modular, off-grid energy and water-management systems that keep facilities operating during climate-driven energy and water disruptions; solar-powered cold storage, ice production, cold rooms and drying technologies, to minimize climate-linked post-harvest losses; and passive ventilation and insulation to maintain product quality under extreme heat and humidity.

Activity 2.2. Develop, with aquaculture cooperatives and industries, with a focus on women- and youth-led industries, commercially viable, market-compliant blue products (including products derived from by-products and waste streams, such as cosmetics, pharma, biofertilizers, fish feed), and establish market linkages with tourism operators, retail buyers and public institutions for climate-resilient blue products.

Activity 2.3. Introduce standards for circular processing (e.g., fish-waste composting, biogas from effluent, water reuse), whether newly developed or adapted from existing national or international standards, to ensure safe resource recovery and support adaptive reuse, reducing pollution loads and dependency on imported inputs by underpinning the circular products developed under Activity 2.2.

Activity 2.4. Provide targeted training to aquaculture cooperatives and industries, with a focus on women- and youth-led industries, on adaptive and circular processing technologies that integrate modern solutions with local and traditional knowledge; quality and safety standards (including climate-adaptation and circular economy standards); climate-informed business plan development; and access to finance.

These activities deliver four concrete Outputs. Activity 2.1 installs and brings into operation adaptive, climate-resilient post-harvest and cold-chain infrastructure in 3 aquaculture processing facilities (**Output 2.1**). Activity 2.2 develops and tests 4 marine-based blue-food products, including products derived from by-products and waste streams, compliant with applicable national quality and food-safety requirements (**Output 2.2**). Activity 2.3 delivers 2 circular processing standards in force and applicable to the supported facilities (**Output 2.3**). Finally, Activity 2.4 trains 300 local workers, managers and cooperative members, particularly women (≥40%) and youth (≥30%), in adaptive processing, quality management, climate-informed business planning and access to finance (**Output 2.4**).

These Outputs produce **Outcome 2**: post-harvest systems and aquaculture value chains in the target municipalities maintain food supply and household income under both extreme events and gradual climatic change, with reduced post-harvest losses, diversified incomes, enhanced food security and expanded market access, particularly for women and youth. Off-grid energy and cold-chain infrastructure keep processing running through the outages and heat episodes that today force spoilage and distress sales; certified blue-food products and circular standards turn what is currently waste into a second income stream, so households are less exposed when raw harvest falls; and trained cooperative members and managers operate the equipment, meet buyer requirements and plan for climate risk, which is what sustains the new market linkages beyond the installation. Component 2 contributes to **Specific Objective 2**. All targets are indicative, to be confirmed during the project formulation phase.

Component 3: Institutional and knowledge systems for climate-resilient aquaculture and ecosystem management

This component strengthens the enabling environment for climate adaptation in aquaculture and associated ecosystems. It responds directly to:

- institutional and information barriers that currently prevent climate risk from being systematically incorporated into aquaculture planning, monitoring and decision-making (including limited access to climate and production data for adaptive management and weak channels for capturing and replicating effective adaptation practices).

It does so by establishing multi-stakeholder coordination mechanisms and a shared knowledge management platform to document and disseminate monitoring data and knowledge products, ensuring that lessons learned from components 1 and 2 are systematically captured, disseminated and replicated.

Activity 3.1. Establish and operate the knowledge management system and multi-stakeholder coordination mechanisms, bringing together CITMA, MINAL, provincial/municipal authorities, research institutions, cooperatives and community representatives, to integrate climate risk into aquaculture planning and decision-making.

Activity 3.2. Collect, systematize, and disseminate lessons learned, guidance, and practical tools for replication of climate-resilient aquaculture practices, through national, regional and South-South exchanges.

Activity 3.3. Establish and operate a results-based M&E system to track progress against outcomes and generate evidence for adaptive management.

Together, these activities deliver three Outputs. Activity 3.1 establishes 2 multi-stakeholder coordination mechanisms, one per province, in Holguín and Las Tunas, supported by a shared knowledge management platform (**Output 3.1**). Activity 3.2 produces and disseminates 6 knowledge products and guidance tools on climate adaptation in aquaculture and ecosystem management, reaching national and regional stakeholders through national, regional and South-South exchanges (**Output 3.2**). Finally, Activity 3.3 makes operational a results-based monitoring and evaluation system that generates evidence for adaptive management (**Output 3.3**).

These Outputs produce **Outcome 3**: institutions and aquaculture stakeholders use climate and monitoring data and knowledge products to coordinate adaptation actions and to replicate climate-resilient aquaculture and ecosystem management practices within and beyond the target provinces. The coordination mechanisms give CITMA, MINAL, provincial authorities and cooperatives a standing forum in which climate risk enters aquaculture planning decisions rather than being addressed after the fact; the monitoring system supplies the evidence those decisions require; and the knowledge products travel to municipalities and cooperatives that the project does not reach directly, extending food-security and resilience benefits to over 20,000 indirect residents across the target municipalities. Component 3 contributes to **Specific Objective 3**. All targets are indicative, to be confirmed during the project formulation phase.

B. Describe how the project/programme provides 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 will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

This project directly addresses the vulnerabilities of coastal and rural communities in the three selected municipalities (Rafael Freyre, Manatí and Puerto Padre), who are among the most exposed to the impacts of climate change, including salinization, drought, ecosystem degradation, and food insecurity.

Within the target municipalities, priority will be given to the most climate-vulnerable groups: women and women-led cooperatives/industries, youth, low-income coastal households, small-scale fishers and aquaculture workers, single-headed households, elderly persons in exposed coastal settlements, informal workers in fisheries and aquaculture value chains, and remote communities with limited access to climate-resilient services and technologies. Target communities and beneficiaries will be identified through a two-step process: (i) participatory climate-risk and vulnerability assessments

and consultations with producers and community representatives during the project formulation phase; and (ii) confirmation in the full proposal, applying the selection criteria and the agency-led process set out in Part II.A. The project will apply transparent selection criteria, sex- and age-disaggregated monitoring and tailored capacity building to ensure equitable benefit-sharing and to reach those most exposed to climate hazards.

The nature and type of all project activities (regenerative aquaculture systems, coastal ecosystem restoration, climate-resilient processing infrastructure, and institutional and knowledge systems) are defined, as are the three target municipalities and the coastal environments in which they will take place. The precise siting of activities and the specific participating cooperatives will be confirmed during the project formulation phase through the documented, multi-criteria process described in Part II.A.

Economic benefits: The project enhances productivity, income diversification and local value addition through climate-smart aquaculture systems and aquatic-based products (e.g. sustainable feed, cosmetics, biofertilizers). By enabling cooperatives and women- and youth-led ventures, it fosters inclusive entrepreneurship and creates decent, climate-resilient jobs along the value chain. Access to training, finance, and infrastructure further enables vulnerable groups to participate in and benefit from climate-smart economic growth, reducing dependence on declining wild fish stocks and increasing adaptive capacity. While detailed baseline data will be refined during project preparation, post-harvest losses are expected to decrease by at least 20% through the adoption of climate-smart technologies, and 4 new blue-food product lines will be developed, of which at least 3 will be linked to local, institutional or regional markets, diversifying household income away from climate-sensitive raw stocks.

Social benefits: The project invests in skills development through capacity-building, leadership roles in cooperatives, and locally appropriate technology adoption. Strengthening community-level knowledge-sharing fosters social cohesion, ownership and resilience, particularly in areas where traditional livelihoods are under threat.

At least 500 people are expected to benefit directly (indicative, to be confirmed during project formulation), of which at least 40% (200 people) will be women and a minimum of 30% will be youth. Equal participation and benefits will be monitored through sex- and age-disaggregated indicators across all components, transparent beneficiary-selection criteria that prioritise women and women-led cooperatives and industries, and the Gender Action Plan to be finalised in the full proposal, as set out in the gender sub-section below and in Table 3. More than 20,000 residents are expected to benefit indirectly through improved food security, more stable production, reduced post-harvest losses and more reliable cold-chain and processing services that strengthen local food availability and nutrition security in communities highly dependent on aquatic foods.

Environmental benefits: Environmental benefits stem from the adoption of climate-smart and regenerative aquaculture systems, reduced post-harvest waste through circular processing, and the use of renewable energy systems. The project will establish 6 climate-smart and regenerative aquaculture sites and restore 30 hectares of coastal and aquatic ecosystems, placed under a maintenance regime agreed with participating cooperatives and municipal authorities (indicative targets, to be confirmed during the project formulation phase). IMTA systems improve water quality by recycling excess nutrients and organic matter through the cultivation of complementary species at different trophic levels, thereby reducing environmental impacts and supporting ecosystem

functioning and biodiversity (Troell et al., 2003; Khanjani et al., 2022)¹². Mangrove and seagrass restoration enhance coastal buffering against storms and erosion. Together, these approaches help regenerate aquatic ecosystems, reduce greenhouse gas emissions, strengthen ecosystem resilience, and protect coastal biodiversity.

Avoidance and mitigation of negative environmental and social impacts: The project will be designed and implemented in full compliance with the AF Environmental and Social Policy (ESP) and Gender Policy. All aquaculture interventions will promote regenerative and low-emission production systems, avoiding the introduction of non-native or invasive species, reducing nutrient and waste discharge, and ensuring efficient use and treatment of water resources.

Potential localized pollution from aquaculture waste will be minimized through a combination of project-supported measures and good practices adopted by the participating cooperatives, industries and communities. The project will provide training and technical capacity to operators on low-pollution and circular production practices (including improved feed and feeding to reduce nutrient losses, safe handling of solids, and reuse of by-products and sludge) and will apply environmental criteria in the selection and installation of project-supported technologies and equipment (such as solar aeration, water-management and processing technologies), so that low-pollution operation is built in from the outset. Building on this, participating cooperatives will adopt and maintain effluent and waste-management practices and environmental operating procedures as part of their day-to-day operations. Water-quality monitoring will draw on the testing and laboratory capacities established under Component 1 (Activity 1.5), allowing relevant parameters to be tracked and used to detect and respond to pollution risks.

The risk of inequitable benefit capture will be addressed through transparent beneficiary-selection criteria, sex-disaggregated monitoring and a gender-responsive action plan informed by the initial gender analysis. Implementation of activities and access to natural resources will be managed through participatory planning with local communities and cooperatives to ensure equitable and sustainable use, preventing involuntary resettlement and conflicts over resource access. Project-supported technologies, equipment installations and site-level interventions will undergo environmental screening to ensure that no activities negatively impact vulnerable habitats, endangered species, or water quality. Remaining potential risks (such as conflicts over resource use or inequitable participation in project benefits) will be carefully assessed and monitored. Where risks are identified, appropriate plans will be developed, including mitigation, monitoring, and grievance mechanisms.

A detailed ESMP will be developed during PFG phase. A comprehensive environmental and social management framework will screen activities for habitat disturbance, pollution or exclusion of vulnerable groups. A stakeholder grievance mechanism and safeguard monitoring procedures will be integrated throughout implementation.

Gender considerations and initial gender analysis: Gender considerations will be integrated through gender-responsive implementation, sex- and age-disaggregated monitoring, and transparent selection criteria based on exposure to climate hazards and

¹² Khanjani, M.H., Zahedi, S., & Mohammadi, A. (2022). *Integrated multitrophic aquaculture (IMTA) as an environmentally friendly system for sustainable aquaculture*. Environmental Science and Pollution Research, 29, 67513–67531.

Troell, M., Halling, C., Neori, A., Chopin, T., Buschmann, A.H., Kautsky, N., & Yarish, C. (2003). Integrated mariculture: asking the right questions. *Aquaculture*, 226, 69–90.

dependence on aquaculture livelihoods.

An initial gender analysis was undertaken during concept preparation, drawing on sector employment data and the gender-responsive consultations carried out across Holguín and Las Tunas. The analysis is set within Cuba's national gender framework (Programa para el Adelanto de las Mujeres, PAM)¹³, to which the project aligns. Women currently represent approximately 22% of the aquaculture and fisheries workforce in the two provinces (151 of 660 workers in Las Tunas and 121 of 565 in Holguín)¹⁴ and are active particularly in the processing and marketing segments of the value chain as well as in cooperative administration, where women-led cooperatives are present and growing. Men are more represented in on-water production and technical roles. Women therefore remain a numerical minority of the sector workforce, even though they are well represented in specific segments, which constitutes a clear entry point for the project.

The project's own gender-responsive consultations with women active in fish processing and cooperative administration identified three concrete, context-specific obstacles to their fuller participation: time constraints linked to unpaid care responsibilities, mobility barriers, and limited access to credit and training¹⁵. These findings informed the project design and the measures set out below.

a. Differences in roles, needs, capabilities, access to and knowledge of resources: Women are concentrated in processing, sorting, marketing and cooperative administration, while men predominate in marine wild fishing, pond management and technical decision-making. Women therefore have lower access to productive assets (ponds, cages, equipment, transport), formal technical training and credit. Their knowledge of climate-smart production practices is more limited than that of men, while their knowledge of post-harvest handling and local markets is often stronger. Time poverty linked to unpaid care responsibilities further constrains their participation¹⁶.

b. General gender statistics highlight disparities: Nationally, female unemployment remained higher than male unemployment for the past nine years (national average 2 %, with higher rates in eastern provinces: Las Tunas 3.0 %, Holguín 2.7 %)¹⁷. Approximately 3/10 women (28.9 %) versus only 0.4 % of men are exclusively engaged in unpaid domestic and care work; the figure rises to 35 % among rural women and is highest in eastern provinces (Holguín 39.6 %, Las Tunas 35.8 %)¹⁸. Employed women still dedicate on average fourteen more hours per week to unpaid domestic work than employed men. The proportion of men with their own income exceeds women's by more than 20%; in rural areas, roughly half of women still lack personal income¹⁹. While gender parity has been achieved in primary education and girls account for most secondary and university graduates, young women remain concentrated in lower-paid,

¹³ Programa Nacional para el Adelanto de las Mujeres (PAM), approved by Presidential Decree No. 198/2021. Available on: <https://www.genero.onei.gob.cu/pamujeres>

¹⁴ Institutional surveys with HOLPES (Holguín) and PESCATUN (Las Tunas) conducted during concept preparation. See Part II.H

¹⁵ Gender-responsive consultations conducted during concept preparation. See Part II.H.

¹⁶ Ibid.

¹⁷ Oficina Nacional de Estadística e Información (ONEI), Observatorio de Cuba sobre Igualdad de Género. Available on: <https://www.genero.onei.gob.cu>

¹⁸ SEMLAC (Servicio de Noticias de la Mujer de Latinoamérica y el Caribe), "Más mujeres que hombres desocupadas y en trabajo doméstico". Available on: <https://www.redsemlac-cuba.net/redsemlac/economia/mas-mujeres-que-hombres-desocupadas-y-en-trabajo-domestico/>

¹⁹ Centro de Estudios de la Mujer (CEM-FMC) and Oficina Nacional de Estadística e Información (ONEI) (2018), Encuesta Nacional sobre Igualdad de Género ENIG-2016. Informe de Resultados, Havana. Available on: <http://www.onei.gob.cu/node/14271>

care-oriented fields²⁰. Health indicators show regional disparities, with higher anaemia and malnutrition rates among children in the east, disproportionately affecting women as primary caregivers²¹. In political participation, by contrast, women held 55.7% of the seats in the National Assembly of People's Power following the 2022–2023 electoral process, placing Cuba second worldwide against a global average of 27.5%²². This national-level representation is not mirrored in technical/managerial decision-making in the fisheries and aquaculture sector at provincial/cooperative levels.

c. Local norms and cultural practices shaping gender relations: In the coastal communities of Holguín and Las Tunas, local norms continue to assign primary responsibility for unpaid care and domestic work to women and associate men with the public and productive sphere. Motherhood is widely regarded as the ultimate expression of womanhood, while men are still expected to fulfil the breadwinner role. Domestic and care tasks are perceived as women's work, and men's involvement can be seen as challenging masculinity. These norms limit women's mobility, control over resources and participation in technical decision-making, and are reinforced from an early age through family, school and community interactions²³.

d. Opportunities and entry points for equal participation: Despite these constraints, entry points exist. Women dominate the post-harvest segment (processing, sorting, marketing), which is the focus of Component 2. Expanding technical skills, leadership in cooperatives, and income from climate-resilient blue-food products can shift norms toward more equitable sharing of productive/care responsibilities, which is how the project expects gender dynamics to support lasting change beyond its duration.

Building on this analysis, the project will ensure that women account for at least 40% of direct beneficiaries (above their current share of approximately 22% of the aquaculture workforce in the two provinces) through the following measures: (i) prioritization of women and women-led cooperatives and industries in beneficiary-selection criteria; (ii) a focus on the processing and value-addition activities of Component 2, where women are already most active, for targeted technology, training and market support; (iii) training and capacity-building scheduled at accessible times and locations, with childcare arrangements where feasible, to address the time and mobility constraints identified in consultations; (iv) targeted training on business planning and on access to finance and credit (Activity 2.4), directly responding to the access barriers women raised in consultations; (v) the engagement of women trainers and role models; and (vi) sex- and age-disaggregated targets and monitoring across all components. These measures are detailed by component in the Gender Analysis table below.

e. Differentiated impacts and gender-related risks: Climate hazards affect women differently because of their concentration in post-harvest segments and greater responsibility for household food security: disruptions to the cold chain and processing translate directly into lost income for women and into household food provision pressure. Component 1 activities risk reinforcing male dominance in technical roles if women are

²⁰ Oficina Nacional de Estadística e Información (ONEI), *Anuario Estadístico de Cuba*, Chapter 18: Education. Available on: <https://www.onei.gob.cu/anuario-estadistico-de-cuba-2024>

²¹ Cruz Martínez, A. et al. (2014). Anemia in Children under Five Years Old in Eastern Cuba, 2005–2011. MEDICC Review, 16(1). Available on: <https://pubmed.ncbi.nlm.nih.gov/24487671/>

²² Oficina Nacional de Estadística e Información (ONEI), Observatorio de Cuba sobre Igualdad de Género, Indicator 17: Proportion of seats held by women in the National Parliament. Available on: <https://www.genero.onei.gob.cu/indicadores/indicador17>

²³ Jones, N. et al. (2020). *The woman in the house, the man in the street: young women's economic empowerment and social norms in Cuba*. Overseas Development Institute (ODI), London. Available on: <https://odi.org/en/publications/the-woman-in-the-house-the-man-in-the-street-young-womens-economic-empowerment-and-social-norms-in-cuba/>

not deliberately included in the design, installation and operation of the aquaculture systems. Activities under Component 2 offer the strongest opportunity for women's empowerment but require explicit access measures, without which the new processing infrastructure could be captured by better-resourced actors. A further risk is that increased participation adds to women's total workload rather than redistributing it, if training and productive activities are not scheduled around existing care responsibilities. These risks will be managed through the measures set out above, monitored through sex- and age-disaggregated indicators, and addressed in full in the Gender Action Plan.

Table 3 Gender Analysis of the Project Components

Project component	Gender risks / challenges	Proposed mitigation measures / strategies	Benefits
Component 1: Climate-smart and regenerative aquaculture systems for ecosystem recovery	Women, who are a minority of the sector workforce, may have lower participation in on-farm technical activities, demonstration plots, and production-related decisions (species selection, stocking, farm management).	Conduct a site-specific gender analysis during the project formulation phase. Set participation targets for women in trainings, demonstrations, and producer groups.	Women gain technical skills and stronger participation in aquaculture adaptation. Households benefit from more resilient production.
	Training may be scheduled in ways that are difficult for women with care responsibilities to attend.	Schedule sessions at accessible times and locations. Ensure women are included in technical committees and field validation activities.	Women's role in ecosystem stewardship and decision-making increases.
	Access to and control of productive assets (ponds, cages, equipment, transport) may be uneven between women and men.	Support women's access to practical training in pond management, water-quality monitoring, biosecurity, and ecosystem restoration (Activity 1.4). Track sex-disaggregated participation and benefits.	Climate-resilient aquaculture practices become more inclusive and more likely to be sustained.
Component 2: Climate-resilient post-harvest processing for food security, income diversification and value chain resilience	Women are concentrated in the processing, sorting and marketing segments of the value chain, which can be lower-paid or less formal.	Prioritize women-led and women-owned enterprises for training and equipment support (Activities 2.2, 2.4). Provide tailored business development, quality-control, and food-safety training for women and youth (Activity 2.4).	Women and youth can move into higher-value roles in processing and marketing. Household income diversifies.
	New processing equipment or market opportunities may be captured by already established actors unless access is explicitly managed.	Ensure fair access to storage, processing, and value-addition facilities. Introduce transparent beneficiary selection criteria.	Post-harvest losses decline. Food safety improves.
	Women may also face mobility constraints, limited access to finance, and lower access to market information (obstacles identified in the project's initial consultations).	Provide training on business planning, market linkages and how to access finance for women's groups (Activity 2.4). Monitor who benefits from improved processing and market access.	Women-led enterprises become more competitive and viable. Local value addition generates broader and more equitable economic gains.
Component 3: Institutional and knowledge systems for	Women may be less represented in some technical coordination and knowledge-platform roles.	Ensure balanced representation of women in coordination mechanisms, committees, and consultation processes. Collect sex-disaggregated data and	The project's knowledge base becomes more complete and more useful. Women's and youth's

climate-resilient aquaculture and ecosystem management		analyze gender-differentiated outcomes.	perspectives shape adaptation planning.
	Lessons learned may be captured in ways that do not reflect women's practical experience or the different needs of younger and older participants.	Include marginalized and vulnerable groups in knowledge-sharing events. Document gender-specific lessons on labor, access, workloads, and benefits.	Institutions gain better evidence of what works for different groups. Governance becomes more inclusive and legitimate.
	If knowledge-sharing is not designed carefully, women, youth, and smaller producers may be excluded from decision-making and from access to information.	Create accessible information products and feedback channels. Include gender indicators in M&E and learning systems.	Lessons can be replicated more effectively in other coastal contexts.

A detailed gender assessment and a Gender Action Plan (with targets, responsibilities, sex-disaggregated indicators and budgeted measures) will be completed during the project formulation phase under the Project Formulation Grant, building on this initial analysis and on deepened engagement with women's associations.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project/programme.

The proposed project targets climate “hotspots” in Holguín and Las Tunas, where climate risks and socio-economic vulnerability are most severe. It leverages existing institutional arrangements, ecosystem restoration data and governance structures financed under Mi Costa, Ecovalor, AdaptHabana and IRES, thereby reducing transaction and start-up costs and avoiding duplication of baseline efforts.

By applying globally tested climate-smart aquaculture solutions, renewable-powered cold storage and circular processing methods adapted to the local context, the proposed project maximizes value for money. It also contributes to achieving multiple benefits with single investments. For example, IMTA systems can simultaneously improve water quality, reduce disease risk and enhance yields; mangrove restoration both protects aquaculture infrastructure and supports fisheries productivity; climate-resilient processing reduces post-harvest losses and improves nutrition security.

At a total project cost of USD 3,900,000 supporting over 500 direct beneficiaries, this represents a cost per direct beneficiary of approximately USD 7,800, which is within the range for comparable AF aquaculture and EbA interventions in SIDS. By improving food security and resilience for the broader region, the project reaches over 20,000 residents indirectly. The investment is tied to measurable results (including a projected reduction of at least 20% in post-harvest losses and at least 30 hectares of coastal ecosystems restored) that keep local food systems viable despite increasingly frequent climate shocks. The costs are further justified by the "single investment, multiple benefits" approach with technical outputs (such as upgraded quality infrastructure and technology) considered essential for long-term sustainability.

The design of the project also reflects an initial comparison of the proposed interventions against the alternatives considered.

Shared versus individual post-harvest infrastructure: concentrating the investment in three shared facilities (USD 700,000, or some USD 233,000 per facility) allows each to be specified with the cold storage, ice production, drying and off-grid solar capacity needed to keep operating through the energy and water disruptions that currently

interrupt processing. The same budget distributed across individual units would deliver a fraction of that capacity per producer and would require a separate energy system, spare-parts chain and maintenance arrangement for each unit, a decisive constraint where imported equipment and spare parts are difficult to obtain. Shared facilities also match the existing pattern of collective landing and processing through cooperatives and the provincial fishing enterprises, and allow women and youth-led groups to access infrastructure they could not finance individually. The trade-off accepted is that producers must transport product to a shared facility and that continuity depends on cooperative governance and maintenance, which the training and business-planning activities under Output 2.4 are designed to address.

IMTA versus conventional systems: the conventional alternative (i.e., intensifying freshwater pond monoculture) has lower initial costs but is maladaptive in the target provinces. It depends on the freshwater availability that drought and saline intrusion are eroding, and on formulated feed whose supply and price are constrained. IMTA requires higher design and establishment costs (an average of some USD 125,000 per site across the six sites), but its extractive components require no external feed and assimilate the nutrients released by fed species, improving water quality and reducing the eutrophication and hypoxia risk that rising temperatures intensify²⁴. Comparative trials in brackish water ponds have found complete IMTA models to be more productive and economically viable than conventional polyculture, with substantially higher net returns and benefit-cost ratios²⁵. The trade-off accepted is that integrated systems are more demanding in design, site selection and management, and their economic performance is site-specific²⁶; these requirements are addressed through the capacity-building under Output 1.3, and the monitoring capacity under Output 1.4, and the configuration for each site will be confirmed during the project formulation phase.

Ecosystem-based protection versus hard coastal defenses: hard structures address a single function at high capital cost and with a permanent maintenance obligation, and they do not restore the nursery, water-quality and sediment-retention functions on which aquaculture production itself depends. Global evidence indicates that mangroves and marshes can be two to five times cheaper than a submerged breakwater for wave heights up to half a meter and become more cost-effective at greater depths²⁷. Restoring 30 ha of mangrove, seagrass and coastal wetland at some USD 15,700 per hectare (consistent with the most cost-effective mangrove restoration approaches documented in developing countries²⁸) reduces wave energy and erosion at the production sites while delivering those productive co-benefits, and the protection appreciates rather than depreciates as the vegetation establishes. Because reported survival rates for planted mangroves average around half²⁹, the investment under Output 1.2 covers not only restoration but also the maintenance regime agreed with cooperatives and municipal authorities, which is what converts planting into durable protection. The trade-off accepted is that the

²⁴ Khanjani et al. (2022)

²⁵ Biswas, G., Kumar, P., Ghoshal, T.K., Kailasam, M., De, D., Bera, A., Mandal, B., Sukumaran, K., & Vijayan, K.K. (2019). Integrated multi-trophic aquaculture (IMTA) outperforms conventional polyculture with respect to environmental remediation, productivity and economic return in brackishwater ponds. *Aquaculture*, 516, 734626.

²⁶ Troell et al. (2003).

²⁷ Narayan, S., Beck, M.W., Reguero, B.G., Losada, I.J., van Wesenbeeck, B., Pontee, N., Sanchirico, J.N., Ingram, J.C., Lange, G.M., & Burks-Copes, K.A. (2016). The effectiveness, costs and coastal protection benefits of natural and nature-based defences. *PLoS ONE*, 11(5), e0154735.

²⁸ Bayraktarov, E., Saunders, M.I., Abdullah, S., Mills, M., Beher, J., Possingham, H.P., Mumby, P.J., & Lovelock, C.E. (2016). The cost and feasibility of marine coastal restoration. *Ecological Applications*, 26(4), 1055–1074.

²⁹ Ibid.

protective effect builds progressively over the first years and that ecosystem-based measures are not a substitute for engineered protection of high-value fixed assets in the most exposed zones, which this project does not construct.

A more detailed options analysis, including unit costs for alternative configurations at each selected site, will be undertaken during the project formulation phase.

From a sustainability perspective, the project is cost-effective because its investments continue to deliver benefits and savings after grant closure rather than requiring recurrent external funding. Renewable-powered and low-input technologies (solar aeration, off-grid solar cold storage, IMTA) lower recurrent energy, input, waste-management, and post-harvest-loss costs over the full asset life, improving the operating economics for cooperatives once the project ends. Because these technologies/practices are transferred to/maintained by participating cooperatives and embedded in national institutions (CITMA, MINAL/GEIP), the benefits are sustained without continued grant dependence. Restored mangrove/seagrass ecosystems provide protective/productive services that endure at no recurrent cost, and diversified, market-linked blue-food products generate revenue that supports O&M of project-supported infrastructure.

Overall, the project proposes investments in climate-resilient technologies and ecosystems that are significantly more cost-effective than repeated post disaster recovery, spreading the upfront adaptation cost over a long stream of future benefits while strengthening Cuba's food sovereignty and mitigating the long-term economic burdens of climate-linked shocks and stresses.

D. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

The proposed project is aligned with and contributes to the implementation of Cuba's key climate, development, food-security and sectoral frameworks. The table below summarizes, for each instrument, its main objective and how the project aligns with it.

Table 4 Project alignment with national or sub-national sustainable development strategies

Strategy, period and link	Main objective	Relevance and alignment of the project
Tarea Vida – State Plan to Confront Climate Change (2017-ongoing) Accessible here More information here	National plan to confront climate change: protect coastal settlements and ecosystems, ensure food security, and relocate or redesign vulnerable infrastructure, prioritizing eastern dry zones and low-lying coasts.	The proposed project is aligned with Tarea Vida-State Plan to Confront Climate Change, under Task 5 (reforestation directed at soil and water protection and at the recovery of the most affected mangroves), Task 8 (adaptation and mitigation measures derived from sectoral policies in programmes, plans and projects linked to food security and fisheries) and Task 9 (strengthening of monitoring, surveillance and early-warning systems for the coastal zone and water quality), contributing to the Plan's strategic directives on protecting coastal settlements and ecosystems and ensuring food security in the priority eastern dry zones and low-lying coasts through Outcome 1 (climate-smart aquaculture systems and coastal ecosystem restoration), Outcome 2 (resilient post-harvest systems and diversified blue-food value chains) and Outcome 3 (institutional coordination, knowledge management and results-based

		monitoring) of the project.
Updated Nationally Determined Contribution (NDC 3.0) (2025-ongoing) Accessible here	Reaffirms adaptation as Cuba's primary climate priority. Identifies the extensive mangrove-covered coastline as a key vulnerability, and prioritizes coastal and marine adaptation, ecosystem-based approaches, early-warning based on coastal hazard/vulnerability studies, and a Just Transition.	The proposed project is aligned with NDC 3.0, under Section 3 (Prioritized Adaptation Actions) on adapting fisheries and aquaculture to climate-driven changes, reducing saline intrusion in coastal aquaculture areas, and protecting/restoring mangrove and seagrass ecosystems, contributing to Cuba's primary adaptation priority and Just Transition principles through Outcome 1 (climate-smart aquaculture systems and coastal ecosystem restoration), Outcome 2 (resilient post-harvest systems and diversified blue-food value chains) and Outcome 3 (institutional coordination and knowledge systems) of the project.
National Program on Biological Diversity (PNDB) (to 2030, towards 2050 Vision) Accessible here	Its 2050 vision is that "biodiversity is valued, conserved, restored and sustainably used, maintaining ecosystem services". Its mission to 2030 is to adopt and implement measures to reduce the loss of Cuban biodiversity as a contribution to national security and prosperous, sustainable development, covering terrestrial, marine and freshwater ecosystems.	The proposed project is aligned with the PNDB, under Target 2 (rehabilitation of degraded terrestrial and coastal-marine ecosystems, which the Programme itself links to Tasks 3, 5 and 6 of Tarea Vida) and its aquaculture target on achieving greater efficiency and yield in aquaculture production through sustainable management, contributing to the 2050 vision that biodiversity is valued, conserved, restored and sustainably used while maintaining ecosystem services through Outcome 1 (coastal ecosystem restoration and regenerative aquaculture) and Outcome 3 (knowledge management and replication of ecosystem-based practices) of the project.
Plan Nacional de Desarrollo Económico y Social (PNDES) (to 2030) Accessible here More information here	Cuba's overarching long-term development plan. It sets out strategic axes including a Natural Resources and Environment dimension covering reforestation, pollution prevention and environmental protection, and, among its sectoral goals, explicitly calls for developing aquaculture using modern cultivation techniques and improved genetics (para. 179)	The proposed project is aligned with the PNDES, under its Natural Resources and Environment dimension and the sectoral goal of developing aquaculture with modern cultivation techniques and improved genetics (para. 179), contributing to sustainable food production, environmental protection and long-term development objectives for the eastern provinces through Outcome 1 (climate-smart and regenerative aquaculture systems) and Outcome 2 (climate-resilient post-harvest and value-chain development) of the project.
Government Economic and Social Programme 2026 Accessible here	Annual government programme. General Objective 3 targets increased national food production and food sovereignty, including a 40% growth target for aquaculture and expanded fish capture, and (action 10.9.c) the territorialization of coastal climate adaptation.	The proposed project is aligned with the Government Economic and Social Programme 2026, under General Objective 3 (increased national food production and food sovereignty, including the 40% growth target for aquaculture) and action 10.9.c (territorialization of climate change adaptation through the preparation and implementation of Municipal Coastal Adaptation Plans), contributing to the national aquaculture growth target and to the preparation of Municipal Coastal Adaptation Plans in the three target municipalities through Outcome 1 (climate-smart aquaculture systems and coastal ecosystem restoration), Outcome 2 (resilient post-harvest systems and diversified blue-food value chains) and Outcome 3 (institutional coordination and knowledge systems) of the project.
Adaptation Plan for the Havana Coastal Zone (under formulation through the GCF-funded AdaptHabana	Adaptation Plan for the 47 km Havana Coastal Zone that addresses medium- and long-term climate risks and specific vulnerabilities and integrates adaptation measures and investment decisions into the development planning process, with the involvement of key	The Plan is not yet finalised: the underlying climate-risk assessments and the adaptation-planning methodology are currently being produced under AdaptHabana. The proposed project applies the same methodological approach to coastal climate-risk assessment and adaptation-responsive territorial planning, transferring it from the urban coastal zone of Havana to aquaculture-dependent coastal municipalities in Holguín and Las Tunas, through Outcome 1 (climate-smart aquaculture systems and coastal ecosystem restoration) and

project). More information here	national and local stakeholders.	Outcome 3 (institutional coordination and knowledge systems) of the project. Once the Plan is finalised, its provisions relevant to coastal aquaculture and ecosystem-based adaptation will be taken into account for the project formulation or implementation, as applicable.
---	----------------------------------	---

Table 5 Project alignment and compliance with national regulatory frameworks

Law and link	Main objective	Relevance and compliance of the project
Fishery Law (129/2019) Accessible here	Establish the regulations for the proper management, administration and control of fishing, for the conservation and rational use of hydrobiological resources in Cuba's marine, fluvial and lacustrine waters, contributing to food sovereignty.	The project complies with the Fishery Law (129/2019), in particular Article 24 (protection of mangroves and coastal vegetation that shelter fishery resources) and Article 25 (research and innovation on the cultivation and processing of aquatic organisms under sustainability criteria), through the ecosystem restoration and regenerative aquaculture systems delivered under Outcome 1.
Food Sovereignty and Food Security Law (148/2022) Accessible here	Establish the framework to achieve food sovereignty and strengthen food and nutritional security, and to organize sovereign, sustainable local food systems that integrate food production, processing, marketing and consumption.	The project complies with the Food Sovereignty and Food Security Law (148/2022), in particular Articles 48 and 49, which require sustainable local food systems to be built on socio-ecological resilience and climate change adaptation, through the resilient production and post-harvest systems delivered under Outcomes 1 and 2.
National Law 150/2022 on the System of Natural Resources and the Environment Accessible here	Establishes the basic principles and rules to ensure the functioning of the System of Natural Resources and the Environment, strengthening the protection and sustainable use of natural resources and the environment as a condition for prosperous and sustainable development	The project complies with Law 150/2022, in particular Article 102(a) on reducing the vulnerability of economic sectors and marine ecosystems to climate change and Article 102(c) on prioritizing adaptation measures that draw on ecosystem services and nature-based solutions, through Outcomes 1 and 3.
Decree 86/2023 on Climate Change Accessible here	Strengthen the institutional framework to confront climate change and promote adaptation and mitigation actions linked to food security, renewable energy, fisheries and other sectors, prioritizing adaptation measures and disaster-risk reduction with emphasis on protecting vulnerable populations and on the coastal zone.	The project contributes to the implementation of Decree 86/2023, in particular Article 1(b) on adaptation actions linked to food security and fisheries and Article 1(c) on prioritizing adaptation and disaster-risk reduction in the coastal zone, through Outcomes 1, 2 and 3.
Decree-Law 77/2023 for Coastal Zone Management Accessible here	Establish the mechanisms, actions, and instruments to be applied in the coastal zone and its protection strip, directed at their sustainable use and at protecting human settlements and economic and social development in these areas.	The project complies with Decree-Law 77/2023, in particular Articles 21 and 22 on the protection of mangroves and coastal vegetation, and contributes to its objective of sustainable use of the coastal zone through the restoration and coordination work under Outcomes 1 and 3.

The project generates as well mitigation co-benefits consistent with Cuba's NDC 3.0 mitigation contributions. The adoption of regenerative aquaculture systems, circular processing practices and waste valorization directly parallels the NDC 3.0's contribution on reducing GHG emissions through treatment of agro-industrial residuals (Section 4.5) and contributes to reducing pressure on wild fisheries stocks and their associated emissions. Critically, the NDC 3.0 identifies blue carbon potential assessment (e.g., coastal mangroves, seagrass beds and other coastal ecosystems) as an explicit national priority for CO2 removal pathways (Section 1.3.3). The ecosystem restoration activities under Component 1 of this project directly support this national priority, positioning the

project to generate verifiable blue carbon benefits and contributing to Cuba's future carbon accounting under the Paris Agreement's transparency framework. Finally, the project's potential to develop blue-economy value chains is consistent with Cuba's stated intention (NDC 3.0, Section 1.2) to use cooperative instruments under Article 6 of the Paris Agreement as a pathway to a lower-carbon, climate-resilient economy.

E. 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.

The proposed project will comply with all relevant Cuban technical standards. The table below summarizes, for each standard, its scope and how the project will comply with it.

Table 6 Project compliance with relevant national technical standards

Standard	Scope and relevance	Linked project outputs	Compliance status
Environmental Impact Assessment: Law 150/2022 and Resolution 90/2023 (CITMA); environmental licence required prior to execution.	Governs mandatory environmental assessment and licensing of interventions affecting natural resources, the environment and the coastal zone. Relevant to ecosystem-restoration works and any intervention in the coastal zone.	Output 1.2 (ecosystem restoration) and coastal-zone works. Compliance output: environmental screening of all interventions and environmental authorizations obtained for ecosystem-restoration and coastal-zone activities.	Planned. Steps: screen each intervention during PFG; prepare and submit assessments to the Centro de Inspección y Control Ambiental (CICA), under CITMA; obtain environmental authorizations for ecosystem-restoration and coastal-zone works before they begin. Competent authority: CITMA. Applications for access to natural areas and for activities involving species management are submitted to, evaluated by and licensed by CITMA's Oficina de Regulación y Seguridad Ambiental (ORSA). Environmental impact assessment of works and investments is licensed through the competent national regulatory authority designated by CITMA, with CICA, responsible for licensing and for environmental inspection and control.
Climate-adaptation and circular-economy standards: ISO 14090 (adaptation), ISO 59000 (circular economy)	Voluntary international good-practice guidance. Relevant to system and value-chain design.	Outputs 1.5 (QI toolkit) and 2.3 (circular standards). Compliance output: QI toolkit and circular-processing standards incorporating ISO 14090/59000 principles.	Voluntary. Steps: incorporate these principles into the QI toolkit and circular standards developed under the project. Competent authority: Oficina Nacional de Normalización (ONN), the national standardization body, which provides technical guidance and conformity assessment for the adoption of international standards in Cuba.
Aquaculture sanitation and hygiene: NC 118:2019 (Code of hygienic practice for aquaculture products); CENASA (MINAG) aquatic-health regulations; fish-movement / species-introduction controls; Decree-Law 31/2021	Regulate hygiene of aquaculture products, aquatic animal health, controls on introduction / movement of species, and welfare of cultured aquatic organisms. Core to all production activities.	Outputs 1.1 (aquaculture systems) and 1.2 (retrofitted ponds). Compliance output: farm designs, stocking densities, species selection and biosecurity protocols supported by the project meet NC 118:2019, CENASA requirements and Decree-Law 31/2021.	Planned / in design. Steps: use only native or nationally-approved species; obtain the required aquatic-health certification for any movement or introduction of species; embed NC 118:2019 hygiene, animal-welfare and biosecurity requirements in the design of project-supported systems. Competent authority: Centro Nacional de Sanidad Animal (CENASA) under the Ministry of Agriculture (MINAG). CENASA is the competent authority for aquatic animal health, biosecurity, species movement/introduction controls and related certifications.

(Animal Welfare)			
Food safety: NC-ISO 22000:2019 (Food safety management systems); Decree-Law 9/2020 (Food Safety)	Mandatory food-safety management for processing of aquaculture and blue-food products. Relevant to all post-harvest and value-addition activities.	Outputs 2.1, 2.2 (processing infrastructure, blue-food products). Compliance output: processing units and blue-food products meeting NC-ISO 22000:2019.	Planned. Steps: specify equipment that supports NC-ISO 22000:2019-compliant operation; the participating cooperatives operate and maintain the facilities in conformity with the standard. Competent authority: Ministry of Public Health (MINSAP), which is the lead sanitary authority for food safety and hygiene oversight under the food safety system, while ONN coordinates standards-related and cross-sectoral aspects of food-safety management.
Renewable energy: NC 1241:2018 (grid-connected PV systems) and NC IEC 61215 (PV modules)	National standards for design, installation and quality of photovoltaic systems and modules. Relevant to all solar-powered technologies.	Outputs 1.2 and 2.1 (solar aeration; off-grid solar cold storage). Compliance output: solar installations meeting NC 1241:2018 and modules certified to NC IEC 61215.	Planned. Steps: specify compliant equipment in procurement; verify certification at installation and commissioning. Competent authority: ONN, together with relevant energy authorities and territorial bodies for installation and commissioning verification.
Occupational health and safety / labour: Law 116/2014 (Labour Code) and NC-ISO 45001:2018 (OSH)	National labour and occupational health-and-safety framework. Relevant to all facilities and workers engaged in production and processing.	Outputs 2.1 (processing facilities). Compliance output: the equipment and installations supported by the project meet the safety requirements of Law 116/2014 and NC-ISO 45001:2018, enabling safe working conditions.	Planned. Steps: embed applicable OSH requirements in equipment specifications and installation; safe operation is maintained by the cooperatives and facility operators. Competent authority: Ministry of Labour and Social Security (MTSS) and its labour inspectorate, together with the employer's occupational-safety services; they enforce labour and OHS requirements and can issue related authorizations or corrective orders.

The project does not involve the construction of new infrastructure. Its physical interventions consist of installing technologies and equipment in existing sites and facilities. National construction codes (e.g. NC 46:2017, NC 285:2003) are therefore not triggered as project obligations. Any minor anchoring or adaptation of installed equipment will respect the applicable technical requirements.

In line with the AF's Environmental and Social Policy, compliance with the law will be ensured through systematic screening of interventions against national legal requirements and obtaining all necessary permits. Human rights will be respected by ensuring that all project activities are implemented in a non-discriminatory, transparent and participatory manner, with particular attention to the meaningful inclusion of vulnerable groups, including women and youth.

A detailed Environmental and Social Management Plan (ESMP) will be developed during full project proposal preparation, including mitigation measures, monitoring indicators and evaluation. The project will also integrate a Gender Action Plan, stakeholder grievance mechanism, and safeguard monitoring procedures.

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

Table 7 Complementarity and non-duplication with related adaptation initiatives in Cuba

Project name, dates and funding source	Geographical scope	Budget in US\$	Description - objectives and focus	Areas of overlap/ not, explain	Complementarity, synergies with the proposed project	Lessons learned	Considerations for design/ non-duplication
Manglar Vivo (project period: 2014-2019 - completed) Reduction of vulnerability to coastal flooding through ecosystem-based adaptation in the south of Artemisa and Mayabeque provinces - Adaptation Fund	South of Artemisa and Mayabeque provinces	6,000,000	Coastal ecosystem-based adaptation project focused on mangrove rehabilitation, coastal protection, community engagement, and institutional coordination through CITMA.	No geographic overlap with Holguín and Las Tunas. Thematic overlap only on EbA, coastal protection, and institutional coordination.	Provides a strong precedent for EbA governance, community volunteer groups, planning mainstreaming, and knowledge management that the proposed project can adapt to aquaculture-dependent coastal communities.	EbA proved highly effective (all targets met, 50% exceeded): >1,500 ha of red mangrove rehabilitated, five community volunteer groups (45% women) established, and EbA mainstreamed into 26 planning instruments, showing that EbA works when paired with institutional coordination and community participation	Avoid replicating mangrove rehabilitation activities already financed elsewhere; instead build on methods, governance arrangements, and planning instruments.
Mi Costa (project period: 2021-2028, ongoing) Coastal Resilience to Climate Change in Cuba through Ecosystem-Based Adaptation - Green Climate Fund	Southern coast of Cuba, approximately 1,300 km	44,300,000	Large-scale coastal resilience project restoring wetlands, mangroves, seagrass, and coral reefs, and strengthening community resilience to flooding and sea-level rise.	No geographic overlap: Mi Costa's mandate is Cuba's southern coast, whereas the project targets the northern coast of Holguín and Las Tunas, which are not covered by Mi Costa. No sectoral overlap either, as Mi Costa centres on coastal ecosystems and flood resilience, not aquaculture production or blue-food value chains.	Strong synergies in governance frameworks, monitoring tools, ecosystem restoration methods, and climate risk information. The proposed project can extend this EbA logic into productive aquaculture systems.	Scaling coastal EbA requires strong monitoring, governance, and community ownership.	Do not duplicate ecological restoration or community resilience activities already funded under Mi Costa; instead use its institutional and technical foundations.
Strengthening the Adaptive Capacity of Coastal	Nine coastal municipalities across Cuba	14,000,000	Binational project focused on adaptation	No direct geographic overlap with the present	The project offers a useful evidence base on adaptation	Regional exchange and structured learning improve	Avoid duplicating food-security diagnostics or

Communities of Cuba and Panama to Climate Change through the Binational Exchange of Best Practices for Climate Management and Local Food Security (project period: 2025-2030, ongoing) - Adaptation Fund	and Panama		planning, South-South cooperation, ecosystem-based adaptation for food security, and resilient value chains.	project outside Cuba's coastal adaptation agenda. Thematic overlap exists on food security, EbA, and resilient value chains, but not on aquaculture-specific systems in Holguín and Las Tunas.	planning, loss-and-damage methodologies, and resilient value chains that can inform the design of aquaculture adaptation.	the quality of adaptation design and implementation.	value-chain training already covered under the binational initiative; focus on the aquaculture value chain gap.
Ecovalor Incorporating multiple environmental considerations and their economic implications in the management of landscapes, forests, and productive sectors in Cuba (project period: 2018-2024, completed) - Global Environment Facility	Holguín, Las Tunas, and 30 coastal municipalities	9,580,365	Project on ecosystem service valuation in landscapes, forests, and productive sectors, with coastal ecosystem data generation and policy integration.	Some geographic overlap with Holguín and Las Tunas, but the focus was on ecosystem-service valuation rather than aquaculture adaptation.	Ecovalor generated baseline ecological data for coastal ecosystems in Manatí (a target municipality) and piloted sustainable oyster culture near mangroves. The project directly inherits these data, valuation methods and institutional networks, without repeating the valuation work.	Valuation tools help make ecosystem services visible in policy and productive decisions.	Use Ecovalor's methods and networks as an analytical and institutional foundation; do not repeat the same ecosystem valuation activities.
IRES Increased climate resilience of rural households and communities through the rehabilitation of production landscapes (project period: 2020-2029,	Three municipalities in Las Tunas, including Jobabo, Amancio Rodríguez, and Colombia	119,000,000	Rural resilience project that has rehabilitated over 2,600 ha of degraded land and trained 3,600 people across 71 institutions in three Las Tunas	Geographic overlap exists in Las Tunas municipalities, but IRES focuses on inland agriculture and productive landscapes rather than coastal aquaculture.	Useful for learning on rehabilitation, training, and institutional coordination in the same municipalities; the proposed project extends resilience from inland systems to the coastal aquaculture frontier.	Landscape rehabilitation and capacity-building can be scaled if linked to livelihoods and institutional strengthening.	Coordinate beneficiary selection and local partners to avoid duplicate training or support to the same households in the same municipalities.

ongoing)- Green Climate Fund			municipalities.				
AdaptHabana (project period: 2022-2027, ongoing) - Green Climate Fund	Havana coastal zone	3,000,000	Coastal adaptation planning project focused on risk assessments, multi-stakeholder coordination, and adaptation-responsive land-use criteria.	No geographic overlap with Holguín and Las Tunas. Thematic overlap is limited to planning methodologies and institutional coordination.	Provides methodological tools that can inform the project's institutional strengthening and planning work.	Adaptation planning improves when it is integrated into land-use, risk assessment, and governance processes.	Use its planning frameworks as a reference, but do not replicate Havana-specific activities or studies.
Conpescas Guacanayabo (project period: 2022 - 2026, ongoing) - Global Environment Facility	Amancio Rodríguez (Las Tunas), Manzanillo (Granma) and Santa Cruz del Sur (Camagüey), on Cuba's south-eastern coast.	1,300,000	Promotes salinometry, pond hygiene, and climate-smart mariculture for oysters, shrimp, and sea cucumber.	Strong thematic overlap on aquaculture / mariculture. Geographically, it operates in Amancio Rodríguez and the adjacent municipalities of the Gulf of Guacanayabo, which are not among the project's three target municipalities.	Highly relevant technical model for regenerative aquaculture, pond management, and mariculture practices that can be scaled or adapted to the proposed project's northern coast sites.	Aquaculture adaptation is most effective when it combines water-quality management, species-specific practices, and producer support.	Coordinate closely to avoid duplication in the same municipalities and to ensure that the proposed project focuses on complementary sites, species, or value-chain stages.
Innovative Blue-Carbon Finance for Coastal and Aquaculture Resilience in Cuba (pipeline/proposed) - Adaptation Fund Innovation Programme	Holguín and Las Tunas	4,900,000	Financial innovation project aimed at blue-carbon credits, payment for ecosystem services, and blue bonds to mobilize long-term resources.	Full geographic overlaps with the present project, but not an overlap in function. The present project delivers concrete adaptation measures; the pipeline initiative focuses on financial sustainability.	These two are highly complementary: this project generates rehabilitated ecosystems, resilient aquaculture systems, and institutional capacity, while the pipeline initiative can monetize and sustain those outcomes over time.	Adaptation interventions are more durable when they are linked to a finance strategy from the start.	The proposed project should build the physical and institutional foundation, while the pipeline initiative should be positioned as the post-project financing pathway.

The project is designed to complement, not duplicate, existing and planned initiatives in Cuba. The table above sets out, for each relevant initiative, its scope, budget, focus, the areas of overlap (if any), its complementarity and synergies with the proposed project, the lessons learned, and the considerations taken into account to avoid duplication. As the table shows, none of these initiatives operate in the project's three target municipalities. Where initiatives are active in the same province (IRES, in other Las Tunas municipalities) or in adjacent territories (Conpescas Guacanayabo), coordination on sites, beneficiaries and species will ensure there is no duplication. The proposed project draws on the governance frameworks, ecosystem-restoration experience, monitoring tools and baseline data generated by earlier initiatives (notably Manglar Vivo, Mi Costa and Ecovalor) and applies them to the productive aquaculture and blue-food dimension that these initiatives do not cover.

G. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

Knowledge management (KM) is centralized under Component 3, which provides the structures to capture, systematize and disseminate the lessons from the technical, social and environmental experiences generated under Components 1 and 2. KM will follow a continuous learning cycle consisting of (i) knowledge capture, (ii) analysis and validation, (iii) preparation of knowledge products, (iv) dissemination through national, regional and international platforms, and (v) application of lessons through adaptive management and replication, involving CITMA, MINAL, provincial authorities, cooperatives, research institutions and implementing partners.

The KM component has four objectives: (i) to document what works and what does not; (ii) to support adaptive management during implementation; (iii) to strengthen national and local capacity to replicate successful approaches; and (iv) to make the project's knowledge available for broader use after the project ends. The proposed project will structure KM around the following activities:

- Implementation learning logs (under Activity 3.3): maintain periodic records of technical, social, environmental and institutional lessons from activities under Components 1 and 2.
- After-action reviews and reflection workshops (under Activities 3.1 and 3.3): hold structured learning sessions after major milestones and around key evaluation points, including the mid-term review and the terminal evaluation, to identify successes, bottlenecks and unintended effects.
- Case studies and technical notes (under Activity 3.2): produce short, practical products on climate-smart aquaculture systems, circular processing, ecosystem restoration, finance access and institutional coordination.
- Knowledge exchange events (under Activity 3.2): organize annual provincial and national exchanges among cooperatives, ministries, research bodies and other climate-resilient projects, as well as a South-South knowledge exchange with regional partners, including the Panama-Cuba regional project and other SIDS initiatives, to share methodologies and results on climate-resilient aquaculture, EbA and blue-economy adaptation.
- Digital dissemination (under Activities 3.1 and 3.2): develop an online repository hosted and maintained by CITMA in collaboration with MINAL, including manuals, data summaries, videos and policy briefs, to make project

knowledge openly accessible and to support replication beyond project sites. The repository will remain operational after project completion as part of the institutions' existing climate adaptation and aquaculture information services.

KM implementation will be coordinated by the Project Management Unit (PMU), under the overall supervision of the Project Manager and with the oversight of UNIDO as Implementing Entity. Within the PMU, a designated Monitoring, Evaluation and Knowledge Management Specialist will be responsible for coordinating knowledge capture, learning, results-based monitoring and dissemination activities, in close collaboration with FC IRIS, CITMA and MINAL. Implementation learning logs and monitoring data will be updated quarterly. After-action reviews will be held after each major milestone and at least annually. At least one knowledge product will be produced annually, and six over the project period, in line with Output 3.2. Provincial knowledge exchanges will be held annually, and a South-South exchange will take place over the project period. Annual learning reviews, coordinated by the PMU with CITMA, MINAL, provincial authorities, cooperatives and research institutions, will analyze implementation evidence, compare results across project sites, identify enabling and limiting factors, assess cost-effectiveness and replicability of adaptation measures, and validate the lessons to be incorporated into technical guidance, policy recommendations and future work plans through the National Steering Committee. These lessons will be consolidated in the annual Project Performance Report submitted to the Adaptation Fund and revisited at the mid-term review and terminal evaluation, ensuring that project learning feeds the Fund's own knowledge cycle.

Initial knowledge mapping and baseline knowledge capture (documenting current aquaculture practices, institutional arrangements, gender roles, climate risks and local adaptation strategies) will be undertaken during the project formulation phase to inform the fully-developed proposal and consolidated at the start of implementation as the reference point for the results-based M&E system under Activity 3.3. During the implementation phase, experiences will be tracked through quarterly monitoring, site visits, field notes, training feedback and adaptive management meetings. Experience tracking will combine quantitative evidence (project indicators, monitoring data, water-quality measurements, production and post-harvest performance) with qualitative methods (beneficiary interviews, focus group discussions, participatory reflection workshops and case-study documentation) to generate a robust evidence base on adaptation performance. This evidence will be analyzed to identify which interventions are most effective under which conditions, comparing results across sites and documenting gender and vulnerability differences.

To ensure that learning persists beyond project closure, all knowledge products, technical guidance, monitoring protocols and adaptation tools developed by the project will be integrated into the knowledge-management systems of CITMA and MINAL, into the curricula of vocational schools and aquaculture training institutes, and into extension services and provincial planning processes. Results will also be shared through UNIDO's global knowledge networks, Adaptation Fund knowledge platforms, regional Caribbean cooperation mechanisms and South-South exchanges, allowing the evidence generated in Cuba to contribute to international learning on climate-resilient aquaculture and ecosystem-based adaptation in Small Island Developing States.

H. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to

vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The concept note preparation followed a gender-responsive, iterative and inclusive consultative process from September 2025 to April 2026, engaging national institutions, provincial authorities and community-level actors across Holguín and Las Tunas in compliance with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy. The tables below provide detailed information on participants (by organization, gender and ethnic group), the concerns raised and how they were addressed, the community leaders involved, and the participation of organizations with a gender remit.

Table 8 Participants in consultation events by organization, gender and ethnic group

Consultation event / community	Organizations represented	# of part.	Gender (F / M)	Ethnic group (skin colour)*
Institutional survey – Holguín	CITMA Territorial Delegation; HOLPES (UEB); University of Holguín; ONN; Territorial Delegation of MINAG	18	8F/10M	Not indicated (n.i.)
Institutional survey – Las Tunas	CITMA Territorial Delegation; Institute of Meteorology; Agroforestry Enterprise	8	3F/5M	(n.i.)
Tarea Vida inter-institutional meeting – Las Tunas	48 organizations and entities linked to Tarea Vida, incl. CITMA, PESCATUN, local governments, Meteorology, Water Resources, Flora & Fauna, Agroforestry Enterprise, University	>60	(n.i.)	(n.i.)
Survey of aquaculture workers – Las Tunas	Empresa Pesquera Las Tunas (PESCATUN)	20	8F/12M	(n.i.)
Puerto Manatí (Manatí municipality)	Community members; U/M Pesca Manatí; MINAL; homemakers; fishers; retirees	40	25F/15M	32 W / 4 B / 2 M / 2 (n.i.)
Cascarero (Jesús Menéndez municipality)	Community members; commerce & gastronomy; education; TCP (self-employed); students; retirees	42	32F/10M	36 W / 5 B / 1 M
Boquerón (Puerto Padre municipality)	Community members; Empresa Filial Pesquera Puerto Padre; education; TCP; retirees	44	26F/18M	36 W / 7 B / 1 M
Subtotal		126	83F/43M	104 W / 16 B / 4 M / 2 (n.i.)
Birán 1 (Cueto municipality)	Community members; Sabanilla farm (UEB, HOLPES); homemakers	8	3F/5M	3 W / 5 M
Cayo Bariay (Rafael Freyre municipality)	Community members; oyster farm (UEB Concha Azul, HOLPES); fishers; education	6	3F/3M	5 W / 1 M
Cuatro Palma (Rafael Freyre municipality)	Community members; processing operators (UEB Concha Azul); homemakers	6	5F/1M	4 W / 2 M
La Canela (Rafael Freyre municipality)	Community members; processing operators (UEB Concha Azul); homemakers	6	5F/1M	4 W / 2 M
Subtotal		26	16F/10M	16 W / 10 M

* Ethnic-group data were collected through the survey field “color de la piel” (B/N/M: White (W)/Black (B)/Mixed (M)), following the categories used by Cuban national statistics.

Table 9 Concerns raised during consultations and how they are addressed in the proposal

Concern / priority raised	Raised by	How it is addressed in the proposal
---------------------------	-----------	-------------------------------------

Limited access to finance and credit for aquaculture producers	HOLPES experts (Holguín); Tarea Vida meeting (Las Tunas)	Component 2 includes capacity building on access to finance for cooperatives and industries; access to finance will also a topic for the KM case studies (Part II.G).
Technological obsolescence and lack of inputs	HOLPES experts; institutional surveys (both provinces)	Components 1 and 2 finance technology transfer, climate-smart production systems and climate-proofed, energy-efficient processing infrastructure.
Insufficient climate data for decision-making	CITMA researchers (Holguín); Meteorology (Las Tunas)	Component 1 establishes salinity and water-quality testing/monitoring capacity; Component 3 establishes the results-based M&E and KM system integrating climate risk into planning.
Risks of introducing new technologies; need for environmental, economic and social safeguards from the outset	Tarea Vida meeting (Las Tunas)	ESP/GP screening completed at concept stage (Part II.K); mitigation measures identified (nature-based solutions, renewable energy, biosafety impact assessment); full ESMP to be developed during formulation.
Mangrove/ecosystem restoration as a pillar of the value chain	Tarea Vida meeting; institutional surveys (unanimous)	Component 1 finances restoration and maintenance of coastal and aquatic ecosystems (approx. 30 ha) protecting aquaculture sites.
High interest in regenerative/multitrophic systems (IMTA); aquaculture–agriculture integration (reuse of effluents)	Institutional surveys Holguín; University of Holguín	IMTA is a core approach of Component 1; circular use of residues/effluents is included under climate-resilient processing and circular-economy measures (Component 2) and will be further assessed during formulation.
Women's structural barriers: participation quotas, flexible schedules compatible with care work, tailored training	Women in CITMA management roles (institutional surveys)	The project sets a 40% target for women beneficiaries with sex-disaggregated indicators; training under Components 1–2 will be designed with schedules/formats compatible with care responsibilities (gender action plan to be completed in formulation).
Proposal to create a women's cooperative dedicated to climate-resilient aquaculture	PESCATUN workers survey (Las Tunas)	The project prioritizes women-led cooperatives and industries in beneficiary selection (Part II.B); the feasibility of a dedicated women's cooperative will be assessed during formulation.
Women concentrated in shell processing with limited access to technical/fishing roles and to training for better employment	Community consultations Holguín; second consultation report (Las Tunas)	Components 1 and 2 include targeted technical training and certification pathways for women to access technical, productive and leadership roles across the value chain, beyond processing.
Invisibility of women's work in statistics; gender-based violence as a barrier to autonomy and leadership	Second consultation report (Las Tunas)	Sex-disaggregated baseline and M&E (Activity 3.3) will make women's roles visible; GBV risk prevention will be integrated in the gender assessment and action plan during formulation, in line with the AF Gender Policy.
Post-project sustainability: local maintenance funds, alliances with polytechnics, manuals in Spanish	Institutional surveys (both provinces)	Part II.G/J: knowledge and tools embedded in national services, training institutes and curricula; manuals and knowledge products handed over in reusable formats in Spanish.
Preferred communication/feedback channels: WhatsApp groups, physical suggestion boxes in cooperatives, quarterly open assemblies	Institutional and community surveys	These channels will inform the stakeholder engagement plan and grievance mechanism to be developed during formulation (ESP compliance).

Table 10 Community leaders involved in high-level planning and decision-making

Community leader	Community / municipality	Role in planning / decision-making	Participation in consultations
Las Tunas			
Mr. Carlos Batista González	Boquerón / Puerto Padre	Community leader	Participated in the in-person consultation
Ms. Yudit Sao García	Cascarero / Jesús Menéndez	Community leader; FMC activist (circunscripción)	Participated in the in-person consultation
Mr. José Alberto Ramos	Puerto Manatí / Manatí	Community leader	Participated in the in-person consultation
Holguín			
Mr. Carlos Rafael Pérez Pérez	La Victoria / Rafael Freyre	Community leader involved in inclusive decision-making	Survey respondent
Mr. Vladimir Beltrán Almestri	Cayo Bariay / Rafael Freyre	Community leader involved in inclusive decision-making	Survey respondent
Mr. Dalvis Batista Bonaga	Aguada la Piedra / Rafael Freyre	Community leader involved in inclusive decision-making	Survey respondent
Ms. Irislandi Castillo Almenares	La Canela / Rafael Freyre	Community leader involved in inclusive decision-making	Survey respondent
Mr. Alfredo Pérez Sánchez	Cuatro Palma / Rafael Freyre	Community leader involved in inclusive decision-making	Survey respondent
Ms. Silvia Suárez Batista	Birán 1 / Cueto	Delegate of Circunscripción 46 (elected local representative)	Survey respondent

Table 11 Participation of organizations with a gender remit

Organization with a gender remit	Level / presence	Participation in the consultative process
Federación de Mujeres Cubanas (FMC)	Present and identified as gender-support organization in all consulted communities (both provinces)	FMC activist Yudit Sao García participated as community leader in Cascarero; FMC identified in every community information form as the organization supporting gender issues.
Comités de Defensa de la Revolución (CDR)	Community-level organization identified alongside FMC in all community forms	Identified as community organization supporting inclusive participation and gender-related outreach at community level.

The process was conducted in two rounds (an institutional round and a community round), coordinated by FC IRIS as the national executing entity under CITMA.

Institutional round: Individual consultations were held with 26 experts and managers from CITMA territorial delegations, HOLPES, the University of Holguín, ONN, the Ministry of Agriculture, the Institute of Meteorology and the Agroforestry Enterprise (Holguín: 18 participants, 8 women; Las Tunas: 8 participants, 3 women). In Las Tunas, the concept note was also presented at the ordinary Tarea Vida inter-institutional meeting, chaired by the Provincial Government's Programme and Project Coordinator and the CITMA Delegate, with over 60 participants from 48 organizations. A separate survey was administered to 20 aquaculture workers of PESCATUN in Las Tunas (8 women, 12 men). These consultations confirmed the project's alignment with national and provincial priorities, identified CITMA, PESCATUN and local governments as the key implementing

actors, and validated the priority climate hazards (drought, saline intrusion, rising water temperature) and adaptation barriers (limited access to finance, technological obsolescence, insufficient climate data) that shaped Components 1-3.

Community consultations were conducted in seven potential communities of the two target provinces: Puerto Manatí (Manatí Municipality), Cascarero (Jesús Menéndez municipality), and Boquerón (Puerto Padre municipality) in Las Tunas (126 participants, 83 women, representing 66% of the total; individual sociodemographic data collected), and Birán 1 (Cueto municipality), Cayo Bariay (Rafael Freyre municipality), Cuatro Palma (Rafael Freyre municipality) and La Canela (Rafael Freyre municipality) in Holguín (26 participants, 16 women, representing 62% of the total). Community information forms were completed with local leaders, including Consejo Popular presidents and an elected circumscription delegate, covering population profiles, climate vulnerability, site-selection rationale and the specific challenges faced by women in each community.

Consultations were designed to capture women's priorities directly. Women constituted 66% of community participants in Las Tunas and 62% in Holguín, and the Federación de Mujeres Cubanas (FMC) was identified as the gender-support organization in every consulted community, with an FMC activist serving as community leader in Cascarero. The priorities women raised were incorporated as follows: (i) demands for participation quotas are reflected in the project's $\geq 40\%$ target for women beneficiaries with sex-disaggregated indicators; (ii) flexible schedules compatible with care responsibilities will shape the design and delivery of training under Components 1 and 2; (iii) the proposal from consulted workers to create a women's cooperative for climate-resilient aquaculture is reflected in the prioritization of women-led cooperatives and industries in beneficiary selection (Part II.B), with its feasibility to be assessed during formulation; (iv) the concern that women remain concentrated in shell-processing roles with limited training opportunities (raised in Cayo Bariay, Cuatro Palma and La Canela) is addressed through targeted technical training and certification pathways enabling women to access technical, productive and leadership roles across the value chain; and (v) concerns regarding the invisibility of women's work and gender-based violence will be integrated into the gender assessment and action plan to be completed during the PFG phase.

Ethnic group data were collected through the survey field "color de la piel" (skin colour), following national statistical categories. Across the community round, 30 of 152 participants (19.7%) identified as Black or Mixed: 20 of 126 in Las Tunas (15.9%) and 10 of 26 in Holguín (38.5%). This is consistent with the demographic composition of the two target provinces, among the least Afro descendant in Cuba: in 2012, 80% of the population of Holguín and 74.6% of Las Tunas identified as white, in contrast with the south-eastern provinces of Guantánamo, Santiago de Cuba and Granma³⁰.

The consultation instruments addressed equity and exclusion explicitly. In Las Tunas, respondents were asked whether the project could generate inequalities of gender, age, skin colour or disability at the implementation sites. Among those who completed the individual questionnaire, respondents identifying as Black or Mixed answered that it could not. In Holguín, respondents were asked what risks they anticipated from new aquaculture systems or processing infrastructure, including the exclusion of vulnerable groups. Most identified environmental risks, and a smaller number raised social risks: conflicts over the use of resources, and, in individual responses, the exclusion of vulnerable groups, inequality in the distribution of benefits, participation gaps and

³⁰ Oficina Nacional de Estadística e Información (ONEI), El Color de la Piel según el Censo de Población y Viviendas 2012, La Habana.

precarious labour conditions.

These concerns are addressed in the proposal through the measures set out in Part II.K: transparent beneficiary-selection criteria with inclusive prioritization, participatory planning, reserved representation for women, youth, low-income households, Afro-descendant residents and other marginalized and vulnerable groups in the Local Adaptation Committees (LACs) and project governance structures, and a grievance redress mechanism (Access and Equity; Marginalized and Vulnerable Groups); and the inclusion of occupational health and safety and labour clauses in contracts, with monitoring of labour conditions (Core Labour Rights). Free, Prior and Informed Consent (FPIC) principles will be applied to all site-level interventions. During the project formulation phase, consultation records will be disaggregated by skin colour as well as by sex and age, so that the priorities of marginalized and vulnerable groups continue to be identified and addressed explicitly in the fully developed proposal.

The consultative process identified the following key adaptation needs that directly informed the project's structure: the need for climate-proofed pond management and aquaculture systems (reflected in Component 1); the critical role of post-harvest infrastructure in reducing climate-linked losses (Component 2); the importance of institutional coordination and knowledge transfer for long-term sustainability (Component 3); and the centrality of women and youth to cooperative governance and processing activities, which shaped the gender targets ($\geq 40\%$ women beneficiaries) and the focus on women- and youth-led industries throughout Components 1 and 2.

A full localized consultation and needs assessment feasibility study will be conducted during the project formulation phase, covering: field consultations in target municipalities; focus group discussions with aquaculture cooperatives and youth groups; institutional engagement with FMC, as the national machinery for the advancement of women and the body through which the PAM is coordinated, through its provincial structures in Holguín and Las Tunas; validation workshops with provincial and municipal governments; and verification of alignment with the Estrategias de Desarrollo Municipal (EDMs) of each participating municipality. The results of this process will be reflected in the full proposal, including a complete stakeholder list, documented feedback and evidence of how inputs were incorporated into the project design. The FMC will also be invited to participate in the multi-stakeholder coordination mechanisms established under Component 3, and its inputs will inform the detailed gender assessment and the Gender Action Plan.

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

The Adaptation Fund-financed activities are expected to successfully deliver the proposed outputs and outcomes independently, without reliance on co-financing or the successful implementation of parallel initiatives. No co-financing is required to achieve the project's objectives. While the project will coordinate with and build upon the knowledge, methodologies, institutional arrangements and lessons generated by previous and ongoing initiatives in Cuba, all proposed activities, outputs and outcomes are fully financed through the requested Adaptation Fund resources and can be implemented independently. Coordination with complementary initiatives is intended to maximize synergies, avoid duplication and enhance replication, rather than to provide essential inputs or financing for the delivery of project results.

The requested USD 3,900,000 from the Adaptation Fund covers the full cost of concrete

adaptation activities required to enhance the climate resilience of aquaculture systems and blue-food value chains in selected coastal municipalities of Holguín and Las Tunas, fully consistent with the Fund's full cost of adaptation policy. These investments address the direct adverse effects of climate change (warming, salinization, droughts, extreme rainfall, hurricanes and storm surges) on vulnerable coastal communities, ecosystems, production infrastructure and post-harvest systems.

Without targeted adaptation, these climate hazards will continue driving escalating production losses, post-harvest spoilage, ecosystem degradation and livelihood collapse, deepening food insecurity and economic vulnerability in Cuba's most climate-stressed provinces. The baseline scenario leaves aquaculture cooperatives and coastal households without the financial, technical or institutional capacity to cope with intensifying risks that disproportionately threaten low-income, rural women and youth dependent on small-scale aquaculture and marine ecosystems.

The proposed funding is essential to bridge this adaptation gap, which target beneficiaries cannot address independently. The project embeds adaptation across all components, delivering long-term resilience, reduced ecosystem pressure and sustainable production systems. By equipping climate-vulnerable communities with the knowledge, tools, infrastructure and institutional mechanisms needed to thrive under current and projected climate conditions, the project ensures lasting transformative impact where national resources alone cannot reach. The full proposal will provide a more detailed component-level explanation of the baseline, adaptation gap and response, expected benefits and the cost justification.

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

Sustainability is an integral part of the project design, the selection of interventions and the exit strategy. Rather than creating stand-alone activities dependent on external finance, the project strengthens existing public institutions, producer organizations, technical capacities and local value chains so that benefits continue beyond the project duration. It is pursued across five interlinked dimensions.

Social sustainability. Benefits are distributed equitably and vulnerable groups participate meaningfully in decision-making, implementation and benefit-sharing. In addition to general capacity building, the project applies concrete inclusion measures: a target of $\geq 40\%$ women among direct beneficiaries with sex-disaggregated indicators; differentiated training designed around care responsibilities; prioritization of women-led and community-based cooperatives and industries in the transparent criteria for access to productive assets and technical assistance; and reserved representation for women, youth, low-income households, Afro-descendant residents and other marginalized and vulnerable groups in the LACs. Labour standards are safeguarded by implementing all productive activities in accordance with Cuban labour law and occupational health and safety norms (Law 116/2014 and NC-ISO 45001:2018) and decent-work principles (non-discrimination, safe working environments and fair treatment) across production, post-harvest handling, processing and ecosystem restoration. The stakeholder grievance mechanism and participatory planning established in the project (Component 3) ensure local concerns are heard, social risks identified early and benefits aligned with local priorities and rights.

Economic sustainability. Adaptation measures are designed to improve productivity,

reduce climate-related losses and generate income able to cover operation and maintenance costs after closure. Climate-resilient production, energy-efficient low-carbon processing, improved cold-chain management, circular use of by-products and better product quality (Components 1-2) reduce waste and recurrent costs while raising the value captured by local producers. This is reinforced by strengthening the business and organizational capacities of cooperatives, industries and service providers (planning, quality management, cost recovery and market access) and by linking adaptation investments to productive use and local revenue generation, so that assets, practices and services are maintained without continued donor funding.

Ecological sustainability. Ecosystem-based adaptation and resource-efficient practices maintain the natural systems on which coastal livelihoods depend, reducing pressure on fragile ecosystems and strengthening the protective functions of mangroves and wetlands (Output 1.2). After closure, restoration and conservation gains are maintained through local stewardship arrangements: producer organizations, local governments and sector institutions are embedded in site management, surveillance and good environmental practice, and the technical capacities strengthened for adaptive management (water-quality monitoring, biosecurity and environmentally sound production – Components 1 and 2) mean ecological benefits function as ongoing local management systems rather than one-time outputs.

Institutional sustainability. The project is anchored in the mandates, systems and coordination structures of the Cuban institutions already responsible for adaptation, aquaculture, territorial planning and environmental management (i.e. CITMA, MINAL, provincial and municipal authorities, research entities and producer organizations) rather than parallel structures, so capacities, methodologies and operational responsibilities remain with national counterparts. The multi-stakeholder coordination mechanisms established under Component 3 (Output 3.1) institutionalize this at provincial level.

Coordination and knowledge continuity. Coordination with related initiatives (as presented in Part II F) is sustained through practical cooperation during implementation: regular technical exchange, joint planning if/where appropriate, and harmonized use of tools, lessons and monitoring information, embedding project results within Cuba's broader adaptation architecture and avoiding duplication. Finally, the knowledge, protocols, case studies and training materials generated by the project are transferred to national and local institutions and integrated into ongoing planning, extension and capacity-development processes (Part II.G), keeping them available for replication, scale-up and policy application after the project ends.

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

The project has been screened in accordance with the Environmental and Social Policy (ESP) and Gender Policy of the Adaptation Fund and has been classified as Category B. This classification reflects that the potential adverse environmental and social impacts associated with the proposed activities are site-specific, limited in scale, reversible, and capable of being readily avoided, minimized, or mitigated through appropriate management measures and ongoing supervision. The project will be designed and implemented in full compliance with the Adaptation Fund's Environmental and Social Policy and Gender Policy.

For the purposes of the screening, the project identifies the following specific

marginalized and vulnerable groups in the target provinces of Holguín and Las Tunas: women, including women-led cooperatives and industries, youth, low-income coastal households, small-scale fishers and aquaculture workers, elderly persons in climate-vulnerable coastal settlements, single-headed households, informal workers linked to fisheries and aquaculture value chains and remote coastal communities with reduced access to climate-resilient infrastructure, services, and decision-making spaces.

Table 12 Summary of environmental, social and safety issues identified

Checklist of environmental and social principles	No further assessment required for compliance	Risk level	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>		Low	The project will support only activities that comply with Cuban law (environment, labour, land, coastal management). <i>Risk:</i> non-compliance at site level (e.g. water use, effluent discharge) if permitting and supervision are weak. <i>Mitigation:</i> systematic legal screening of activities; obtaining and monitoring all required permits; integration of national standards into technical designs; inclusion of compliance clauses in agreements with cooperatives and industries, and continuous monitoring throughout implementation.
<i>Access and Equity</i>		Medium	Overall positive impact by targeting vulnerable coastal communities with limited access to climate-resilient technologies and services. <i>Risk:</i> better-connected groups capture most benefits (infrastructure, training, finance), reinforcing existing inequalities; conflicts over resource use; inequitable benefit sharing. <i>Mitigation:</i> participatory planning, transparent beneficiary selection with inclusive criteria prioritizing low-income households, women and youth; equitable resource-access arrangements; inclusive participation throughout implementation; grievance redress mechanism.
<i>Marginalized and Vulnerable Groups</i>		Medium	Positive impact by focusing on climate-vulnerable communities (as defined above) and enhancing their resilience. <i>Risk:</i> some highly vulnerable groups (remote coastal communities, informal workers linked to fisheries, elderly people, single-headed households) may be excluded from decision-making and benefits, and benefit sharing may be inequitable. Exclusion may occur due to geographic isolation, limited mobility, weaker links to formal cooperatives or state enterprises, lower literacy or access to information, and time poverty. These groups include a higher proportion of women, particularly women engaged in informal processing and marketing roles and women heads of household who face compounded mobility and care constraints. <i>Mitigation:</i> vulnerability analysis during full proposal preparation; targeted outreach and participation quotas; tailored training modalities and communication tools; transparent beneficiary selection criteria; inclusive stakeholder engagement.
<i>Human Rights</i>		Low	The project is expected to support the realization of rights to adequate food, decent work and a healthy environment by improving the resilience of food systems and livelihoods. <i>Risk:</i> if participation is not inclusive or benefits are captured by elites, perceptions of unfairness could arise. <i>Mitigation:</i> rights-based, participatory design; access to information; free, prior and informed consultation as appropriate to the context; continuous monitoring and a grievance mechanism accessible to all groups.
<i>Gender Equality and Women's Empowerment</i>		Medium	Positive impact through targeted support to women-led cooperatives, training and leadership roles in value chains. <i>Risks:</i> entrenched gender norms could limit women's effective participation; women may see increased workload without commensurate benefits; benefit sharing may be inequitable. <i>Mitigation:</i> initial gender analysis and a budgeted Gender Action Plan;

			gender-balanced participation targets in training and governance bodies; monitoring of sex-disaggregated benefits and workloads, transparent selection, participatory planning and implementation.
<i>Core Labour Rights</i>		Medium	Activities are expected to create decent work opportunities in line with national labour law. <i>Risks:</i> potential non-compliance with occupational health and safety standards in installation, processing and farm activities; risk of informal arrangements not fully respecting core labour rights. <i>Mitigation:</i> inclusion of OHS and labour clauses in contracts; training on safety; monitoring of labour conditions; explicit prohibition of child and forced labour and continuous monitoring under this principle throughout implementation.
<i>Indigenous Peoples</i>	x	N/A	No indigenous peoples as defined under the AF ESP are expected to be directly affected in the target provinces.
<i>Involuntary Resettlement</i>		Low	The project will not finance activities that require physical displacement. <i>Risks:</i> economic displacement (e.g. changes in access to fishing or aquaculture areas or land reallocation for infrastructure). <i>Mitigation:</i> careful site selection; preference for upgrading existing facilities; avoidance of activities that restrict access; if unavoidable, development of livelihood restoration measures consistent with the AF ESP.
<i>Protection of Natural Habitats</i>		Medium	Net positive impacts expected through mangrove and seagrass restoration and nature-positive aquaculture. <i>Risks:</i> localized habitat disturbance from new ponds, cages or infrastructure; potential pressures on vulnerable areas if siting is inadequate. <i>Mitigation:</i> exclusion of critical habitats and protected areas from siting; EIAs and licensing through CITMA where required; ecosystem-based site selection criteria; monitoring of habitat condition.
<i>Conservation of Biological Diversity</i>		Medium	Positive impacts through reduced pressure on wild stocks and restoration of coastal ecosystems. <i>Risks:</i> introduction or expansion of non-native strains, disease transfer, or genetic erosion if broodstock and seed management is poor. The Medium rating reflects the inherent risk associated with aquaculture activities, which requires site-level assessment and management measures rather than screening out. <i>Mitigation:</i> use of native or nationally approved species only; adherence to NC 118:2019 hygiene and biosecurity requirements and to Decree-Law 31/2021; zoosanitary authorization from CENASA (MINAG) for any movement or introduction of species, and environmental licensing through ORSA/CITMA under Law 150/2022 where a species introduction requires it; collaboration with national research institutes on broodstock and seed systems; monitoring of disease and escapes. Species selection and biosecurity protocols will be confirmed for each site during the project formulation phase and reflected in the ESMP.
<i>Climate Change</i>	x	Low	The project is an adaptation intervention that does not generate activities increasing vulnerability to climate change or producing significant greenhouse gas emissions. Energy demand at supported sites is met through renewable off-grid solar systems, and installation-related emissions are marginal and outweighed by reduced fossil-fuel use over the asset life. Conservative climate projections are applied in the design of all supported systems, with assumptions reviewed periodically under the monitoring system of Output 3.3.
<i>Pollution Prevention and Resource Efficiency</i>		Medium	Net positive impacts are expected through climate-smart, regenerative aquaculture systems, improved effluent management and circular processing. <i>Risks:</i> potential localized pollution associated with aquaculture production and processing, including wastewater generation, nutrient discharge, organic waste, sludge and by-products, and the limited use of fuels and cleaning agents. <i>Mitigation:</i> environmental criteria applied in the selection and installation of project-supported technologies and equipment; training and technical capacity for operators on low-pollution and circular production practices, including improved feed and feeding to reduce nutrient losses, safe handling of solids

			and reuse of by-products and sludge; adoption and maintenance of effluent and waste-management practices and environmental operating procedures by participating cooperatives; water-quality monitoring drawing on the testing and laboratory capacities established under Activity 1.5; environmental management plans for farms and processing facilities to be developed as part of the ESMP.
<i>Public Health</i>		Medium	Positive impacts through improved food and nutrition security and potential reductions in pollution. <i>Risks:</i> food safety concerns if processing and storage are not properly managed; vector risks from poorly managed ponds or waste. <i>Mitigation:</i> application of NC-ISO 22000:2019 and national food safety and hygiene standards under the oversight of MINSAP; training in HACCP-type practices; proper pond and waste management; coordination with health authorities where relevant.
<i>Physical and Cultural Heritage</i>	x	N/A	No activities are planned in known cultural heritage sites.
<i>Lands and Soil Conservation</i>		Low	Positive impacts through restoration of vegetative cover and use of sludge as soil amendment where appropriate. <i>Risks:</i> soil erosion or salinization from poorly designed ponds, canals or drainage; contamination from inappropriate sludge disposal. <i>Mitigation:</i> good design of water infrastructure; erosion control measures; guidelines for safe use and disposal of sludge; monitoring of soil conditions in affected areas.

PART III: IMPLEMENTATION ARRANGEMENTS

The implementation agency will be UNIDO. The Cuban DA has identified FC IRIS as the lead executing entity and requested UNIDO for co-execution support. Within this project, UNIDO will provide execution support to build FC IRIS' capacity to ensure the successful execution of the proposed project as well as future AF projects.

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

FC IRIS: FC IRIS will serve as the Lead National Executing Entity, responsible for day-to-day management and coordination of all national project activities, fiduciary oversight at the national level, and ensuring alignment with Cuba's State Plan for Confronting Climate Change (Tarea Vida), the NDC 3.0, the PNDES 2023, and the national legal frameworks governing coastal zone management and food security. Fundación IRIS will chair the National Steering Committee and oversee the coordinated work of all institutions involved in project implementation, ensuring that project benefits reach the communities most exposed to climate change.

CITMA, through its regional delegations in Holguín and Las Tunas and through the Environmental Agency (AMA), will serve as the lead institutional partner for environmental oversight, regulatory compliance and coordination with national

adaptation planning instruments. CITMA will ensure policy coherence with Tarea Vida implementation, provide technical guidance on ecosystem-based adaptation measures, and support the integration of project outcomes into provincial and municipal development strategies.

GEIP, under MINAL, will contribute sectoral expertise and technical knowledge to ensure that adaptation measures are directly relevant to the realities of aquaculture and fisheries communities in Holguín and Las Tunas. GEIP will support the integration of climate-resilient practices into aquaculture and fisheries value chains, facilitate the adoption of sustainable technologies and management systems, and ensure that quality and safety standards are consistently applied across project-supported enterprises.

ONN will support the development and adaptation of quality infrastructure tools for climate-smart aquaculture, ensuring that standards, metrology, conformity assessment and accreditation mechanisms are integrated into the project's capacity-building and technology transfer activities in line with national/international norms.

At the sub-national level, the **provincial governments of Holguín and Las Tunas**, together with municipal authorities and LACs, to be established at municipal level under Activity 3.1, will coordinate and support field-level implementation of aquaculture and ecosystem restoration activities within their jurisdictions, ensuring coherence with the Estrategias de Desarrollo Municipal and local planning priorities. The LACs will ensure participatory planning, community-level monitoring and equitable benefit-sharing, with attention to women, youth, low-income households, Afro-descendant residents and other marginalized and vulnerable groups.

Aquaculture cooperatives and industries in the target municipalities (including women- and youth-led enterprises) will participate directly in project implementation as beneficiaries and actors, adopting climate-smart aquaculture practices, managing and maintaining project-supported infrastructure, and contributing to the monitoring and knowledge-sharing activities of Component 3.

A **National Steering Committee**, chaired by FC IRIS and including representatives from CITMA, MINAL/GEIP, ONN, provincial governments, and community organizations, will provide strategic oversight, approve annual work plans and budgets, and review progress against outcomes. UNIDO will participate as a standing observer to ensure fiduciary compliance and alignment with AF requirements.

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.

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

Table 13 Alignment of Project Components with the Result Framework of the AF: impact level

Project Impact	Project Impact Indicator(s)*	Fund Impact	Fund Impact Indicator	Grant Amount (USD)
Increased climate resilience of aquaculture-dependent communities and	Number of direct beneficiaries with reduced climate vulnerability in aquaculture-dependent communities (disaggregated by sex and	Increased resiliency and reduced vulnerability at the community,	Core Indicator 1: Number of beneficiaries [# of people, disaggregated by direct and indirect	3,393,504

blue-food production systems in selected coastal municipalities of Holguín and Las Tunas	age). Indicative target: (≥500, of whom ≥40% women and ≥30% youth)	national, and regional levels to climate variability and change	beneficiaries, by sex, by vulnerable groups, and by sector]	
	Number of indirect beneficiaries in target municipalities. Indicative target: (≥20,000)			
Total impact-level grant amount				3,393,504

Table 14 Alignment of Project Components with the Result Framework of the AF: outcome level

Project Outcome(s)	Project Outcome Indicator(s)*	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)*
Outcome 1: Aquaculture production systems in the target municipalities and the coastal ecosystems that protect them sustain production and recover faster from climate hazards, with reduced exposure and sensitivity to climate risks.	1.1 Number of production sites maintaining production under climate stress. Indicative target: (≥6 sites, including ≥3 coastal/marine aquaculture systems and ≥3 retrofitted ponds)	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	Indicator 4 (Core Indicator 3): Physical assets improved or constructed to withstand climate variability and change [disaggregated by km of linear infrastructure and # of point infrastructure, and by sector]	750,000
	1.2 Hectares of coastal and aquatic ecosystems (mangroves, seagrass, wetlands) restored and under an active maintenance regime at project closure. Indicative target: (≥30 ha)	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	Indicator 5 (Core Indicator 4): Ecosystems and natural resources brought under protection, restoration, or improved management in response to climate variability and change [# of hectares, disaggregated by type of ecosystem / natural resource area and by protection, restoration, and management]	470,000
	1.3 Number of producers applying climate-smart aquaculture practices (disaggregated by sex, age and vulnerable group status). Indicative target: (≥150 of the 200 trained, of whom ≥40% women and ≥30% youth)	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes	Indicator 3B: People implementing new or improved adaptation actions [# of people, disaggregated by sex and by vulnerable groups]	330,000
	1.4 Number of monitoring protocols/systems for key climate parameters	Outcome 2: Strengthened institutional capacity to reduce risks	Indicator 2: Institutions with strengthened capacity to	160,000

	(salinity, temperature, pH, DO) in routine use by laboratories and producers. Indicative target: (≥2)	associated with climate-induced socioeconomic and environmental losses	understand and better address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	
Subtotal Outcome 1				1,710,000
Outcome 2: Post-harvest systems and value chains in the target municipalities maintain food supply and household income under both extreme events and gradual climatic change, with reduced post-harvest losses, diversified incomes, enhanced food security and expanded market access, particularly for women and youth.	2.1 % Reduction in post-harvest losses in supported facilities. Indicative target: (≥20%)	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	Indicator 4 (Core Indicator 3): Physical assets improved or constructed to withstand climate variability and change [disaggregated by km of linear infrastructure and # of point infrastructure, and by sector]	571,504
	2.2 Number of aquaculture industries/cooperatives using climate-resilient post-harvest infrastructure. Indicative target: (≥3)	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	Indicator 4 (Core Indicator 3): Physical assets improved or constructed to withstand climate variability and change [disaggregated by km of linear infrastructure and # of point infrastructure, and by sector]	280,000
	2.3 % increase in average income of participating households (disaggregated by sex of household head). Indicative target: (≥15%)	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Indicator 6B (Core Indicator 5): Households with increased income, or avoided decrease in income [# of households, disaggregated by female-headed households]	216,000
	2.4 Number of new blue-food products linked to markets. Indicative target: (≥3 of the 4 developed)	Outcome 8: Innovation for effective, long-term adaptation to climate change accelerated, encouraged, and enabled to scale up	Indicator 8A: Innovations successfully reaching scale up that demonstrate local innovation participation and/or local innovation benefit [# of innovations]	186,000
	2.5 Number of circular processing standards adopted by the competent national	Outcome 7: Improved policies and regulations that promote and enforce	Indicator 7: Policies, strategies, and/or plans adopted, implemented, and/or	90,000

	authority and applied in supported facilities. Indicative target: (2)	resilience measures	enforced that integrate climate risk and resilience considerations [#, disaggregated by scale, by policy step, and by sector]	
Subtotal Outcome 2				1,343,504
Outcome 3: Institutions and aquaculture stakeholders use climate and monitoring data and knowledge products to coordinate adaptation actions and to replicate climate-resilient aquaculture and ecosystem management practices within and beyond the target provinces.	3.1 Number of multi-stakeholder coordination mechanisms whose recommendations are incorporated into provincial aquaculture planning. Indicative target: (2, one per province)	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Indicator 2: Institutions with strengthened capacity to understand and better address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	110,000
	3.2 Number of knowledge products adopted by national institutions or training institutes. Indicative target: (≥4 of the 6 produced)	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Indicator 2: Institutions with strengthened capacity to understand and better address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	60,000
	3.3 Number of cooperatives outside the intervention sites adopting climate-resilient aquaculture practices as a result of dissemination activities and exchanges. Indicative target: (≥2)	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes	Indicator 3B: People implementing new or improved adaptation actions [# of people, disaggregated by sex and by vulnerable groups]	40,000
	3.4 Number of institutions using project data and tools for climate adaptation planning. Indicative target: (≥6)	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	Indicator 2: Institutions with strengthened capacity to understand and better address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	130,000
Subtotal Outcome 3				340,000
Total outcome-level grant amount				3,393,504

Table 14 Alignment of Project Components with the Result Framework of the AF: output level

Project Output(s)	Project Output Indicator(s)*	Fund Output	Fund Output Indicator	Grant Amount (USD)
Output 1.1: Climate-smart and regenerative aquaculture systems established and operational at selected sites in Holguín and Las Tunas	Number of sites with climate-smart and regenerative aquaculture systems operational. Indicative target: 6 (3 coastal/marine systems; 3 retrofitted ponds)	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	Indicator 4.1: Development sector services strengthened to respond to climate variability and change [# of sector services, disaggregated by sector and by scale]	750,000
Output 1.2: Coastal and aquatic ecosystems adjacent to the selected production sites restored and placed under a maintenance regime	Hectares of mangrove, seagrass and coastal wetland restored and under a maintenance regime agreed with cooperatives and municipal authorities. Indicative target: 30 ha	Output 5.1: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	Indicator 5.1: Ecosystems and natural resources targeted by activities to improve protection, restoration, and/or management [# of resources, disaggregated by type of ecosystem / natural resource area and by protection, restoration, and management]	470,000
Output 1.3: 200 aquaculture producers and cooperative members trained and certified in climate-smart aquaculture practices	Number of producers and cooperative members trained and certified (disaggregated by sex and age). Indicative target: 200, of whom ≥40% women and ≥30% youth	Output 3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	Indicator 3.1: People participating in activities to improve awareness of climate risks and how to address them [# of people, disaggregated by sex and by vulnerable groups]	300,000
Output 1.4: Testing and monitoring system for key adaptation parameters operational in national laboratories	Number of laboratories with the testing and monitoring system operational. Indicative target: 2	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	Indicator 4.1: Development sector services strengthened to respond to climate variability and change [# of sector services, disaggregated by sector and by scale]	130,000
Output 1.5: Quality Infrastructure toolkit for climate-smart aquaculture adapted and disseminated	Number of cooperatives, laboratories and competent authorities reached with the toolkit. Indicative target: 20	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	Indicator 3.2: Climate resilience knowledge products and/or tools developed and shared with stakeholders [# of products/tools, by sector]	60,000
Output 2.1: Adaptive, climate-resilient post-harvest and cold chain infrastructure installed and operational in aquaculture processing facilities	Number of processing facilities with climate-resilient post-harvest and cold-chain infrastructure operational. Indicative target: 3	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	Indicator 4.1: Development sector services strengthened to respond to climate variability and change [# of sector services, disaggregated by sector and by scale]	700,000
Output 2.2: Marine-based blue-food products developed,	Number of blue-food products developed, tested and compliant	Output 8.1: Innovations identified and piloted that collectively enhance	Indicator 8.1B: Innovations piloted that demonstrate local innovation participation and/or	310,000

tested and compliant with applicable national requirements	with applicable national requirements. Indicative target: 4	local innovation capacity and contribute to the development of local, national and regional adaptation innovation ecosystems	local innovation benefit [# of innovations]	
Output 2.3: Circular processing standards in force, whether newly developed or adapted from existing standards	Number of circular processing standards in force and applicable to the supported facilities. Indicative target: 2	Output 7.1: Improved integration of climate-resilience strategies into country development plans	Indicator 7.1A (Core Indicator 6): Policies, strategies, and/or plans developed or adjusted to integrate climate risk and resilience considerations [# of policies, strategies, and/or plans, disaggregated by scale and by sector]	180,000
Output 2.4: Local workers, managers and cooperative members trained in adaptive processing, quality management, climate-informed business planning and access to finance	Number of workers, managers and cooperative members trained (disaggregated by sex and age). Indicative target: 300, of whom ≥40% women and ≥30% youth	Output 6.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	Indicator 6.1: People receiving targeted support for new and/or improved livelihoods to manage climate risk [# of people, disaggregated by sex and by vulnerable groups]	153,504
Output 3.1: Multi-stakeholder coordination mechanisms established in Holguín and Las Tunas, with a shared knowledge management platform	Number of provincial multi-stakeholder coordination mechanisms established with a shared knowledge management platform. Indicative target: 2	Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	Indicator 2.1: Institutions supported to strengthen capacity to understand and address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	150,000
Output 3.2: Knowledge products and guidance tools on climate adaptation in aquaculture and ecosystem management produced and disseminated	Number of knowledge products and guidance tools produced and disseminated to national and regional stakeholders. Indicative target: 6	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	Indicator 3.2: Climate resilience knowledge products and/or tools developed and shared with stakeholders [# of products/tools, by sector]	100,000
Output 3.3: Results-based monitoring and evaluation system operational	Results-based M&E system (indicator framework, baseline and data-collection protocols) operational. Indicative target: 1	Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	Indicator 2.1: Institutions supported to strengthen capacity to understand and address climate risks and resilience [# of institutions, disaggregated by scale, by sector, and by type of institution]	90,000
Total output-level grant amount				3,393,504

*All targets are indicative and will be confirmed during the project formulation phase.

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

A. Record of endorsement on behalf of the government²

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) 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 (CITMA)	Date: November, 12, 2025
---	--------------------------

B. Implementing Entity certification

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (.....list here.....) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender 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

UNIDO / Implementing Entity Coordinator

Date: (Month, Day, Year)

Tel. and email: g.onysko@unido.org

Project Contact Person:

Tel. And Email:



DR1: 930/25



ADAPTATION FUND

November 12, 2025

To:

Adaptation Fund Board Secretariat

c/o Global Environment Facility

1818 H Street NW, MSN N7-700

Washington, DC 20433, USA

Email: afbsec@adaptation-fund.org

Tel: +1 202 473-5943 (secretariat)

Fax: +1 202 522-3240/5

Subject: Endorsement for the project “Climate Smart aquaculture systems and resilient blue food industries”

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

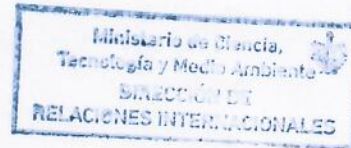
The project is aligned with Cuba's National Adaptation Plan (Tarea Vida), the National Food Sovereignty and Nutritional Education Plan and Updated Nationally Determined Contribution (2021), prioritizing the provinces of Holguín and Las Tunas as highly vulnerable to drought, coastal erosion, and food insecurity. The project supports national objectives and priorities for strengthening food security, sustainable aquaculture, and ecosystem-based adaptation. It also contributes to advancing the country's Blue Economy Strategy under development by the Ministry of Science, Technology and Environment (CITMA) and the Ministry of Food Industry (MINAL).

The project will be implemented by the United Nations Industrial Development Organization and executed by national entities to be confirmed during the

development of the proposal. As requested by the Government of Cuba, UNIDO will also partially execute the project.

Accordingly, I am pleased to endorse the proposal "**Climate Smart aquaculture systems and resilient blue food industries**" with support from the Adaptation Fund. The project will be implemented by the United Nations Industrial Development Organization (UNIDO).

Sincerely,



Dr. C. Lisbet Font Vila

Designated Authority of Cuba for the Adaptation Fund



Revised PFG Submission Form¹

Project Formulation Grant (PFG)

Submission Date: 03/09/2026

Adaptation Fund Project ID:

Country/ies: Cuba

Title of Project/Programme: Climate Smart aquaculture systems and resilient blue food industries

Type of IE (NIE/RIE/MIE): Multilateral Implementing Entity

Implementing Entity: United Nations Industrial Development Organization (UNIDO)

Executing Entity/ies: UNIDO

A. Project Preparation Timeframe

Start date of PFG	January 2027
Completion date of PFG	October 2027

B. Proposed Project Preparation Activities (\$)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note²
1. Baselines, vulnerability assessments, feasibility studies and HACT assessment	In-depth diagnostic report with climate risk profiles, socioeconomic baselines for aquaculture in Holguín and Las Tunas; QI capacity assessment; institutional mapping and complementary interventions analysis; technical and economic feasibility analysis of climate-smart technology options; site-specific recommendations validated by stakeholders. HACT assessment of National Executing Entity (Fundación Climática IRIS).	60,000	Team of 1 national expert (3 months) + 1 international expert (2 months); field missions to Holguín and Las Tunas; data collection tools; report analysis and drafting. Includes feasibility studies and institutional mapping.
2. Participatory consultations, TNAs and ESS/gender analysis	Co-design workshops with communities and cooperatives in both provinces; participatory identification and validation of adaptation options;	22,000	Two provincial missions for participatory TNAs; facilitation and

¹ As presented in AFB/PPRC.33/40 Annex 1.

² The proposal should include a detailed budget with budget notes indicating the break-down of costs at the activity level. It should also include a budget on the Implementing Entity management fee use.

	gender-responsive and socially inclusive approaches integrated, including targeted consultations with Afro-descendant community members, provincial FMC structures, women's associations and youth groups; ESS screening and risk categorization updated and confirmed; draft Environmental and Social Management Plan (ESMP), including the grievance mechanism, developed; Gender Action Plan drafted; environmental and social risk mitigation measures identified.		logistics costs; safeguard and gender specialists; stakeholder interviews; local logistics.
3. Stakeholder validation workshop and full proposal development	Full proposal drafted and submitted; national validation workshop organised; proposal endorsed by key stakeholders; target locations confirmed through the documented multi-criteria selection process described in the concept note; consultative process documented for AF	10,166	One national validation workshop (venue, facilitation, documentation); full proposal drafting and final review; coordination costs.
Implementing Entity Fees (8.5%)	IE oversight (monitoring, fiduciary, compliance, reporting)	7,834	UNIDO SAP management, procurement, risk/ESS/HACT supervision.
Total Project Formulation Grant		100,000	

To develop the full proposal, a multidisciplinary team of technical experts will be engaged, including one national expert (three working months) and one international technical expert (two working months). This team will lead the formulation process by conducting field missions, collecting primary data, and organizing participatory consultations with key stakeholders and beneficiary communities. These activities will ensure that the proposal is evidence-based, inclusive, and aligned with national priorities and Adaptation Fund criteria.

The PFG will finance the following preparatory activities:

- **Baseline and vulnerability assessments:** Comprehensive assessments will establish baselines for aquaculture production systems and environmental vulnerabilities in Holguín and Las Tunas. These will include climate risk profiling (storm exposure, sea temperature, salinity, bathymetry, water quality) and socio-economic diagnostics. The analysis will also cover Quality Infrastructure (QI) capacities to support climate-resilient aquaculture and compliance with sanitary and market standards.
- **Participatory technology needs assessments (TNAs):** Community-driven consultations and co-design workshops will identify and validate potential adaptation options, including Integrated Multi-Trophic Aquaculture (IMTA), through participatory TNAs and feasibility studies. Gender-responsive

and socially inclusive approaches will be integrated to ensure equitable participation and benefit-sharing.

- Preliminary Environmental and Social Safeguards (ESS) and gender analysis: The formulation process will include ESS screening and risk categorization, development of a Gender Action Plan, and identification of mitigation measures for potential environmental and social risks, in compliance with Adaptation Fund policies.
- Feasibility studies for climate-smart aquaculture options: Technical and economic feasibility assessments will be conducted for prioritized adaptation options, including IMTA and other climate-smart technologies, to ensure their viability and appropriateness for local conditions.
- Institutional and policy mapping: The team will map public, donor, and private sector interventions to identify opportunities for coordination and synergies, as well as institutional gaps and policy needs for mainstreaming adaptation in aquaculture systems.
- Stakeholder validation workshop: A national-level validation workshop will be organized to present and endorse the full proposal, confirm target locations, and secure stakeholder ownership prior to submission to the Adaptation Fund.

The outputs of these activities will include a comprehensive diagnostic report, feasibility analyses, ESS and Gender Action Plan and an institutional coordination framework.

A full project proposal will be drafted based on the result of above activities which will be then presented for validation and endorsement at national level, before submission to the Adaptation Fund.

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 Implementing Entity Coordinator		
Signature		Date (Month, day, year)	3 September 2026
Project Contact Person	Ms. GALLARDO GOMEZ, Rebeca		
Telephone	+43 1 26026 3401		
Email Address	r.gallardo-gomez@unido.org		