ADAPTATION FUND

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Adaptation Fund Board
Project and Programme Review Committee
Thirty-seventh Meeting
Bonn, Germany, 7-8 April 2026

PROPOSAL FOR LIBYA

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project Concept

Country/Region: Libya
Project Title: Strengthen climate change adaptation and Health system preparedness, readiness and resilience to multi-hazard risks and climate impacts
Thematic Focal Area: Disaster Risk Reduction
Implementing Entity: World Health Organization (WHO)
Executing Entities: UNDP
Ministry of Environment,
Ministry of Health,
Ministry of Local,
Ministry of Agriculture,
National Center for Disease Control,
National Center for Animal Health,
Ministry of Local Government, Environmental Sanitation Affairs

AF Project ID: AF00000519
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): 5,000,000
Reviewer and contact person: Lystra Fletcher-Paul
Co-reviewer(s): Laura Abram Alberdi
IE Contact Person:

Technical Summary	The project "Strengthen climate change adaptation and Health system preparedness, readiness and resilience to multi-hazard risks and climate impacts" aims to strengthen a climate-resilient health system capable of preparing for, responding to and reducing the impacts of climate-related multi-hazard threats. This will be done through the five components below: Component 1: Strengthen the evidence base to predict and mitigate health impacts of climate change (USD 440,000). Component 2: Enhance health system climate resilience through policy integration and multisectoral collaboration (USD 860,000).

	Component 3: Improve the resilience and sustainability of healthcare facilities in the face of climate change (USD 1,350,000). Component 4: Strengthen disease surveillance and early warning systems for climate related health risks (USD 880,000). Component 5: Enhance workforce preparedness and operational readiness capacity to climate-related health risks (USD 640,507). Requested financing overview: Project/Programme Execution Cost: USD 437,788 Total Project/Programme Cost: USD 4,608,295 Implementing Fee: USD 391,705 Financing Requested: USD 5,000,000 The initial technical review raised several issues, such as but not limited to, the relevance of some statistics in the Background and Context, the number and consistency of the Components, scope and scale of the deliverables, Theory of Change, Quantification of benefits, National and sub-national strategies and plans, Technical Standards, duplication of other projects, Alignment with the AF results framework, sustainability and Environmental and Social impacts, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review.
Date:	**3 March 2026**

Review Criteria	**Questions**	**First Technical Review Comments 3 March 2026**
Country Eligibility	1. Is the country party to the Kyoto Protocol, and/or the Paris Agreement?	**Yes.**
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Libya is a developing country highly vulnerable to the adverse effects of climate change due to its arid climate, chronic water scarcity, and fragile institutional

		context. The country faces increasing temperatures, more frequent and intense heatwaves, flooding events, droughts, and sand and dust storms. These climate hazards directly and indirectly affect public health, including heat-related illness, water- and vector-borne diseases, and disruption of health service delivery. Vulnerability is further compounded by damaged infrastructure and limited adaptive capacity within the health system.
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Endorsement letter dated 8 February 2026.
	2. Does the length of the proposal amount to no more than Fifty pages for the project/programme concept, including its annexes?	**No.** **Editorial/formatting comments:** - Kindly include a Table of Contents with page numbers (and annex list) to support navigation and traceability of key sections and attachments. - Kindly revise the document to ensure that all key factual assertions —particularly in the Context/Background section— are supported by footnoted citations. Please also ensure the footnotes are used consistently throughout the document. - Kindly revise the Context/Background evidence to ensure that key statistics and examples are clearly relevant to Libya and explicitly linked to the project's vulnerability pathways and design choices. Where global/cross-country figures are used (e.g., FCS poverty trends; GBV/child marriage examples), please either (i) briefly explain the implication for Libya and how it informs the proposed interventions, or (ii)

		remove/replace them with Libya-relevant evidence. For the Minimum Expenditure Basket (MEB) statement, please provide a more meaningful comparison (e.g., year-on-year or multi-year trend) and explain its relevance for vulnerability and access to services under climate shocks. - For key monetary figures presented in LYD (including the MEB), please include an approximate USD equivalent in parentheses. **CR1:** Please revise and resubmit the Concept Note to ensure full compliance with the 50-page maximum limit, including annexes, while maintaining required content. **CR2:** Please note that the Terminal Evaluation should be completed within 9 months of the Project Closing date. Thus the date in the Project Calendar (page 17) should be changed to a date within that time period.
	3. 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?	**Yes, however additional information is required.** The climate section (pp 5 – 6) currently mixes observed climate, future projections, and climate impacts, which makes it harder to assess the magnitude/uncertainty of key climate drivers and how they inform the selected adaptation approach. In addition, climate variables are sometimes referenced imprecisely (e.g., “temperature” without specifying whether it refers to mean, maximum, or minimum temperature; baseline period; horizon; scenario). A clearer structure would strengthen the CN.

		CR3: Kindly reorganize the climate section using clear sub-headings for: (i) observed climate trends, (ii) projected future climate (including horizon and scenario where available), and (iii) climate impacts/risk pathways relevant to health outcomes. Please also define climate variables precisely (e.g., mean vs maximum temperature; precipitation/extreme rainfall; heatwave metrics) and indicate the reference period and uncertainty where cited. While the CN provides a strong narrative on climate hazards and states that climate change "fundamentally modifies" the baseline, the current description is not consistently specific on what currently exists and what climate-attributable gaps exist in the main areas of intervention (e.g., surveillance/EWS functionality and interoperability; emergency preparedness structures and SOPs; baseline facility resilience to heat/flooding and service disruption). **CR4:** Kindly clarify in the Background/Context and/or component descriptions with respect to the following: (i) what currently exists (baseline systems/capacities) for surveillance/EWS, emergency preparedness, and facility resilience; (ii) what climate-related limitations/gaps are currently observed; and (iii) how the proposed activities will address those climate-attributable gaps. There are instances where statements do not align with the paragraph's focus (e.g., marine impacts such as saltwater intrusion, seagrass loss and marine heatwaves introduced within a mental health

		discussion). In addition, the narratives in pages 10 to 12 would be better placed in the section on project implementation arrangements rather than contextual background. At CN stage, the context section should primarily focus on the health sector related issues (governance, actors, institutional constraints) and the climate/health vulnerability rationale, while project implementation details can be reserved for the project description and expanded at Full Proposal stage. **CR5:** Kindly review the Context/Background section to ensure thematic coherence (removing or relocating statements that do not relate to the paragraph's topic) and to avoid including detailed project implementation arrangements in the context section. Please retain in Context/Background only the essential country/system governance context (health sector ecosystem, institutional challenges, key actors) and move project implementation details to the project description section (to be further elaborated at Full Proposal stage). There is also inconsistencies throughout the proposal in the number of components as well as the priorities assigned to the respective components. For example, the section on "Project Components and Financing" (pp 13 – 17) describes 5 Project Components along with their respective outputs and outcomess. However, the last sentence in the section titled "Linking climate projections to the adaptation intervention mix:" (page 20) states that the project is "structured around **four** mutually reinforcing components." In addition, in Part II (Justification for funding requested) in the subsection titled: "Key elements of the full cost of adaptation reasoning

		include:" (pages 41 – 42) maps the priorities identified in the consultation feedback to four components. Moreover, the components do not coincide with those in the Project Components table. (e.g., "Component 3 in the stakeholder feedback is associated with integrated climate-informed surveillance and EWS which is Component 4 in the Components table and Component 2 prioritizes WASH and solarization which is Component 3 in the Project Components Table. **CR6:** Kindly confirm the final number of components and revise the concept note to harmonize component numbering/titles consistently across all sections (objectives, Components & Financing table, benefits narrative, consultation-feedback mapping, and results alignment). Please ensure that each activity/output is traceable to the correct component and that the ToC narrative reflects the same finalized structure. There is also some inconsistency in the number of direct beneficiary (1,070,500 vs 1,071,500) based on the stated catchment methodology. **CR7:** Please correct and harmonize the direct beneficiary figure across the document. If the stated methodology is maintained (80 PHC × 10,000 + 6 hospitals × 45,000 + 1,500 trainees), the consistent total is **1,071,500**. The description of the interventions and infrastructure proposed by the project does not provide sufficient details to adequately assess whether the requested budget is justified. For example: The CN allocates the sum of USD 120,000 for "Output 2.1.1 – National Health Adaptation Plan developed." Given that

		sectoral adaptation planning typically requires multi-stakeholder consultation, technical analysis, drafting, validation, and institutionalization steps, the CN should clarify what “NHAP” entails (e.g., a full sector plan vs a more limited strategy/toolkit), its expected deliverables, and the consultation/validation process to ensure it is a robust adaptation product (and not a nominal document). The CN indicates that site/facility prioritization and community participation mechanisms will be developed further at Full Proposal stage (p 39). Given that site selection largely determines who benefits (especially vulnerable groups) and how well activities address climate risks, the CN should already provide a preliminary prioritization logic grounded in climate hazard exposure, vulnerability, and service criticality. **CR8:** Kindly provide a concise, CN-level set of preliminary prioritization criteria (e.g., climate hazard exposure, vulnerability, service criticality, accessibility for vulnerable groups), and please explain how stakeholder/community inputs—including women, youth, persons with disabilities, IDPs and migrants—will be incorporated to validate and refine these criteria during Full Proposal development. The concept note discusses multiple system and facility-level constraints throughout the narrative, but the barriers the project intends to address are not synthesized in one place. A short, structured list of key barriers at the end of the context section (immediately before “Project Objectives”) would strengthen traceability (problem → barriers → activities/components) and improve the reviewer’s

		ability to assess alignment and adaptation additionality. This would also support the description of the Theory of Change. **CR9:** Kindly include, immediately before the "Project Objectives" section, a concise list of the main barriers/gaps the project aims to address (e.g., surveillance/EWS gaps, preparedness and response capacity gaps, continuity of energy and WASH in facilities, coordination/One Health gaps, access barriers for vulnerable groups), and briefly indicate how these map to the project components. Given the current inconsistencies in component structure and narrative references, a simple visual Theory of Change would materially improve clarity and traceability at concept stage. A ToC diagram would help confirm the results chain and ensure alignment between the climate risk rationale, the selected adaptation measures, the intended outcomes, and the five-component structure. **CR10:** Kindly include a concise Theory of Change diagram (CN-level) that visually links (i) key climate hazards and vulnerability drivers; (ii) the project's objective(s) and five components/outputs; (iii) the expected short- and medium-term outcomes on health system resilience/adaptive capacity and (iv) risks and assumptions. Please ensure the diagram is consistent with the final component structure.

	4. 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?	**Yes, however, additional information is required.** Part II B (pp 31 – 34) articulates a broad set of expected economic, social and environmental benefits and commits to ESP/Gender Policy compliance (screening, ESIA/ESMP, consultations, gender analysis and GAP). However, the benefits narrative is largely qualitative, and several statements require clarification to ensure consistency with the project design and to demonstrate equitable, direct benefits for vulnerable groups across components. While vulnerable groups are listed (e.g., women and girls, persons with disabilities, IDPs, migrants, children, elderly), the proposal does not specify the *particular benefits* each group will receive in the target areas, nor how equitable distribution will be operationalized. **CR12:** Please add a short "beneficiaries → concrete benefits" block that links each priority group to specific project features (e.g., accessible WASH upgrades, inclusive early-warning communication formats, CBS participation pathways, ORI microplans prioritizing displaced populations, referral continuity measures). The economic, social and environmental benefits are largely qualitative. Quantified estimates already mentioned in the components would strengthen the impact narrative and improve alignment with the Fund's results-based approach. **CR13:** Where possible, please quantify expected benefits using already stated project parameters (e.g., direct beneficiaries, number of facilities upgraded,

		number of professionals trained) and briefly indicate that additional benefit quantification (including proxy indicators and any estimates) will be developed and substantiated at Full Proposal stage. The proposal commits to a gender analysis and Gender Action Plan, but the gender benefit statements remain generic and include at least one imprecise claim (e.g., WASH in healthcare settings reducing women's burden of water collection). **CR14:** Please (i) include a summary on initial gender considerations/assumptions relevant to the Libyan context (differential risks, barriers to access, protection risks under climate shocks), and (ii) refine WASH-related gender benefits to reflect realistic pathways (privacy, safety, menstrual hygiene management where applicable, accessibility, reduced exposure to protection risks when accessing services). The social benefits section states that the project will build the capacity of "health professionals and communities" and enable communities to "take ownership" of health and adaptation strategies. Based on the outputs described, community capacity-building is currently most explicit through Community-Based Surveillance (Component 4) and dissemination/risk communication elements, rather than a broader community empowerment package. **CR15:** Please either (a) adjust the wording to reflect the current scope (community participation primarily through CBS, risk communication and inclusive alert dissemination) and justify the short scope, or (b) explicitly add/describe additional community-level

		activities that enable direct and equitable engagement beyond beneficiary status—such as community preparedness planning linked to the All-Hazards PPR Plan, community committees/networks for climate-health preparedness, co-design of risk communication messages and triggers, and participatory monitoring roles for women, youth and vulnerable groups across Components 3–5.
	5. Is the project / programme cost effective?	**Yes, however, additional information is required.** Part IIIC (page 34) provides a general value-for-money narrative (leveraging existing structures, prevention, One Health coordination and synergies). However, the cost-effectiveness rationale remains largely generic and includes statements that are not clearly reflected in the proposed component outputs. In addition, the breadth of the proposed package (policy/planning, systems strengthening, surveillance/EWS, facility upgrades including solar and WASH, workforce capacity-building) requires a clearer explanation of scope prioritization and sustainability logic to demonstrate cost-effectiveness within the USD 5 million envelope, particularly in the context FCV (Fragility, Conflict and Violence). **CR16:** Please clarify how the scope of activities has been prioritized to ensure feasibility, depth of impact, and cost-effectiveness within the requested budget, particularly given the FCV operating context. Please strengthen the value-for-money narrative by referencing the project's key measurable outputs already presented (e.g., number of facilities supported, number of personnel trained, surveillance/EWS functions strengthened).

	6. 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?	**Yes, partially.** Part II D (pp 35 and 36) demonstrates strong alignment with Libya's climate–health priorities as articulated in the (updated/draft) NDC and the One Health policy direction. It also refers to relevant sectoral and cross-sectoral instruments (e.g., One Health MoU, health system strengthening priorities, food security/food safety strategy, SDGs). However, several references require stronger substantiation (document titles/status), and some acronyms/targets should be supported with explicit citations to the relevant national instruments. The CN refers to Libya's "first NDC (2025)" and to NAP priorities/implementation. **CR17:** Kindly consider including the details of all the identified plans and strategies in table format, including: (i) The Specific name of the plan/strategy and years of implementation, title and issuing institution (ii) Main Objective(s) (iii) Status (i.e. draft/updated or under preparation) (iii) Explain the relevance to the proposed project, including its alignment with the existing plan or strategy.
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**No.** Part II E (pp 36 – 37) states *an intention* to comply with national technical standards and to default to international best practice where national standards

		are absent or inconsistently applied. However, it does not identify the relevant national technical standards (e.g., building codes, water quality regulations, electrical/solar installation standards, healthcare waste and wastewater requirements) nor does it explain how compliance will be ensured and verified in practice, as required under the Fund's ESP. **CR18:** Please identify the relevant national authorities/competent entities and the applicable technical frameworks (where available) that will govern: (i) building/works approvals and construction requirements for healthcare facilities, (ii) electrical safety and solar installation requirements, (iii) WASH and water quality requirements for healthcare settings, and (iv) healthcare waste and wastewater management requirements. Where formal standards are not available or not consistently applied, please indicate the interim approach and the international reference standards that will be adopted.
	8. Is there duplication of project / programme with other funding sources?	**No.** See Part II F (;age 37) The CN does not identify the main potentially overlapping projects/programmes in Libya that relate to the proposed interventions (e.g., health facility solarization/WASH rehabilitation, One Health initiatives, early warning systems, and surveillance strengthening), nor does it clearly explain where overlap may exist and how complementarity and learning from prior initiatives will be ensured. The proposal currently refers to WHO's country support and a general "One Health initiative," but does not list other key programmes/donors operating in related areas in Libya.

		CR19: Please identify, to the extent possible, the main relevant initiatives and funding sources that could overlap with project activities—particularly those related to: (i) solar energy for health facilities (e.g., UNICEF-supported solarization of PHC facilities), (ii) One Health initiatives supported by other donors (e.g., EU/AICS-supported One Health launch), and (iii) early warning/hazard systems and related platforms (e.g., UNICEF-supported "Libya Mozn" real-time early warning system). The CN does not demonstrate a logical assessment of where overlap may occur (if any) and how this project will avoid duplication while building synergies (e.g., distinct geographic targeting, complementary system functions, or integration of health EWS with existing hazard EWS). **CR20**: Please prepare a comprehensive list of all relevant project providing information on their budget, the donor, years of implementation and objectives and identifying areas of synergy/complementarity, lessons learned (including mistakes) and non-duplication.
	9. Does the project / programme have a learning and knowledge management component to capture and feedback lessons?	**No.** Part II G (pp 37 – 38) of the CN describes a set of learning and knowledge management (KM) activities (learning reviews/workshops, documentation of case studies, policy briefs/technical reports, and participation in national/international forums). However, these KM activities are not clearly anchored in the project's outputs, budget and implementation arrangements, and the "feedback loop" for applying lessons learned to improve delivery is not sufficiently specified.

		The KM activities are described narratively but are not clearly reflected as costed outputs (beyond limited dissemination elements already included under Component 1). **CR21**: Please clarify where KM is delivered within the existing component structure (e.g., primarily through Component 1 dissemination outputs and as a cross-cutting function). The proposal does not explain how learning will be systematically tracked, analyzed periodically, and fed back into implementation decisions to improve effectiveness and scalability. **CR22**: Please briefly describe the learning cycle (what evidence will be tracked, frequency of learning reviews, and how lessons will be translated into concrete adjustments—e.g., updates to SOPs/simulation exercises, training curricula, facility readiness standards, and coordination protocols). In the Full Proposal stage, it is expected that the intended institutional location for knowledge management products (e.g., Ministry of Health/NCDC/One Health platform), the intended repository/access mechanism, and how lessons learned will be disseminated to national and subnational stakeholders (including inclusion considerations where appropriate) will be indicated.
	10. 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?	**Yes, however, additional information is required.** Part II H (pp 38 – 40) describes the initial consultation workshop held in August 2025 and lists categories of participants (government ministries, UN agencies,

		research institutions, local government, healthcare providers), and it also refers to targeted engagement with CSOs working on gender equality, disability inclusion, youth/women empowerment, and climate advocacy. However, the description does not provide basic verifiable information required to assess inclusivity and gender considerations—such as the total number of participants, % women/men, whether vulnerable groups were present directly or only represented indirectly through CSOs, the names of the CSOs/organizations consulted, and the timeframe for the non-workshop consultations. **CR23:** Kindly provide additional detail on the consultative process, including: (i) the total number of people consulted and the % women/men (and, where available, age/disability status); (ii) the names of the organizations consulted (including CSOs) and how they were selected; and (iii) the timeframe (dates/months) for interviews/engagements beyond the August 2025 workshop. Please also clarify whether vulnerable groups were consulted directly at this stage or only indirectly through CSOs, and how gender considerations were operationalized in the consultation process. The narrative does not clearly confirm direct consultation with target-area groups, nor does it describe how specific concerns (e.g., barriers to access during floods/heatwaves, GBV risks during displacement) were translated into concrete design choices, criteria, or safeguards at this stage. **CR24:** Kindly clarify whether marginalized and vulnerable groups in the intended target areas (e.g., IDPs, migrants, persons with disabilities, women and

		youth) were consulted directly in the initial consultations at concept stage, and if not, please explain how their interests and concerns are being captured and reflected in the current concept design. Please describe which specific consultation inputs influenced which elements of the concept (e.g., component focus, inclusion measures, risk management measures). Please also confirm whether any indigenous peoples have been identified in the target areas and, if applicable, how they were engaged at this stage. The CN explicitly states that “community participation mechanisms” and “prioritization of specific facilities” will be addressed during full proposal preparation (p 39). Given that major investment decisions (e.g., which facilities/sites will be upgraded) strongly determine who benefits, deferring prioritization without outlining at least initial criteria and an approach to incorporate community input creates a risk that participation becomes procedural rather than influential. **CR25:** Kindly explain how community and vulnerable-group inputs will be integrated into site/facility prioritization and design decisions during full proposal development. Please provide an initial set of prioritization criteria and a short description of the process to validate these criteria with affected communities (including separate sessions for women, youth, PWD, migrants and IDPs, as referenced). As site prioritization will be finalized at Full Proposal stage, the consultation narrative would benefit from clarity on whether any indigenous peoples and/or distinct ethnic minority communities may be present in

		the preliminary target areas, and how this will be verified and addressed through stakeholder engagement.
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yes, however, additional information is required.** Part II I (pp 40 – 42) provides a generally sound "full cost of adaptation" rationale, distinguishing climate-driven additionality from baseline health system needs (e.g., climate-informed surveillance/EWS, climate-proofing of facility operations through energy/WASH resilience, and multisectoral One Health preparedness and workforce readiness). However, several inconsistencies require clarification to demonstrate that the USD 5 million request, on its own, will deliver the stated outputs and contribute meaningfully to the adaptation objectives. The section cites interventions that are not clearly included in the project design and budget (e.g., "community-based water harvesting systems," "loss of cultural heritage," and broad "MHPSS programming"). **CR26:** Please remove these examples or explicitly anchor them to defined, costed outputs. Where psychosocial elements are intended, please align references to the scope already described (e.g., Psychological First Aid and GBV-sensitive care within workforce training and emergency preparedness protocols).
	12. Is the project / program aligned with AF's results framework?	**No**

		CR27: The alignment table in Part III A (pp 46 – 50) has to be revised according to the instructions provided in the following link: https://www.adaptation-fund.org/wp-content/uploads/2025/11/Alignment-with-Adaptation-Fund-Results-Framework-Template-and-guidance-Nov-2025.docx Please ensure the following: Upper section of the table: i) Enter the Project Objectives in the "Project Objective(s)" column; ii) Add the corresponding Project Objective Indicator(s) in the ”Project Objective Indicator(s)” column; iii) For each Project Objective indicator, select only the most appropriate SRF Fund Outcome and enter it in the "Fund Outcome" column; iv) Select only the most relevant SRF Fund Outcome Indicator for each Fund Outcome and enter it in the "Fund Outcome Indicator" column; and v) Input the total project activity cost (USD 4,170,507) in the column “Grant Amount (USD)”, Lower section of the table: i) List the five project outcomes listed in the project Components and Financing Table in the “Project Outcome(s)” column, along with their respective outcome-level indicators in the “Project Outcome Indicator(s)" column; ii) For each indicator, select only the most relevant corresponding SRF Fund Output and enter it in the "Fund Output" column; iii) Choose only the most relevant SRF Fund Output Indicator for each Fund Output selected and enter it in the "Fund Output Indicator" column; and

		iv) Input the grant amount for each Project Outcome in the "Grant Amount (USD)" column, again ensuring that the total equals the project activity cost of USD 4,170,507) Lastly, please ensure that all the Fund Outcomes associated with the listed Fund outputs in the lower section of the table are reflected in the upper section of the table.
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes, partially.** Part II J (pp 42 – 43) f the CN reflects a clear intention to sustain adaptation benefits by embedding climate–health resilience within national systems (policy integration, institutional strengthening, surveillance/EWS, and institutionalized training). However, the sustainability narrative remains largely generic and includes activities not reflected in the project design, while key arrangements for sustaining infrastructure and digital systems beyond project end are not sufficiently articulated. The section does not adequately describe all aspects of sustainability – environmental, social, institutional and financial. **CR28:** Please rearrange the Section to explain how sustainability will be addressed under the key headings of economic, environmental, social, institutional and financial sustainability. The CN does not explain the specific arrangements to sustain operation and maintenance (O&M) of proposed facility-level investments (e.g., solar energy systems and climate-resilient WASH upgrades),

		including responsibility, budgeting, and lifecycle considerations. **CR29**: Please briefly clarify the intended O&M arrangements for solar/WASH installations (institutional responsibility at facility/municipal/national level, maintenance approach, and how recurrent costs and lifecycle management will be addressed), consistent with the implementation arrangements described (e.g., UNDP's role in establishing O&M arrangements). While the CN emphasizes lasting surveillance and early-warning benefits, it does not specify how interoperable platforms and digital solutions (e.g., One Health surveillance platform and e-PHEM/PHEOC systems) will be hosted, maintained, and financed after project completion. **CR30**: Please indicate the intended institutional host(s), integration with existing national information systems, and high-level provisions for ongoing operation/support (including recurrent costs) to ensure sustainability beyond the project period. The CN does not describe how the project will enable replication and scaling-up with other funds, nor how financial sustainability will be supported through national/sub-national budgeting and governance processes. **CR31**: Please briefly outline the project's replication/scaling strategy.
	14. 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?	**Yes, however additional information is required** Part II K (pp 43 – 45) presents an environmental and social (E&S) screening/checklist and indicates that an ESIA/ESMP will be prepared at Full Proposal stage,

		however, the concept note does not clearly state the overall AF ESP risk category (A/B/C) resulting from the screening. **CAR1**: Kindly provide the AF ESP risk category (A/B/C) and a brief justification, explicitly referencing the planned physical works (e.g., solar PV, WASH upgrades, and any associated waste streams). The CN suggests that certain interventions and/or locations may be identified and prioritized at Full Proposal stage. Given this staged approach, it is unclear whether any activities or components will be treated as Unidentified Sub-Projects (USPs) under AF guidance (i.e., activities not yet defined to the level needed to identify E&S risks at concept stage). Clarifying this point is necessary to understand how screening, risk management instruments (e.g., ESMP), consultation, and grievance arrangements will be applied prior to implementation of site-specific works. **CAR2:** Kindly clarify whether any activities/components will be treated as Unidentified Sub-Projects (USPs) under AF guidance. If yes, please explain which activities would be considered USPs, why, and how USP risks will be screened and managed prior to implementation (including how this will be reflected in the ESMP/ESIA scope, stakeholder engagement, and grievance mechanisms). Please include this clarification in Section K, before the screening table.

		While Section K presents an E&S screening table, the screening table does not clearly and consistently demonstrate full consideration of the AF ESP principles that always apply (notably Principle 1 on compliance with the law, Principle 4 on human rights, and Principle 6 on core labour rights) in a way that is traceable to activities and mitigation measures. In addition, there are inconsistencies in referencing components/activities within the table. **CAR3:** Information presented should be revised as follows to better align with the Environmental and Social Policy of the Fund and its guidance document: i) for all principles for which impacts or risks were identified and for Principles 1, 4, 6 (which always applies), such impacts or risks should be described in the third column along with mitigation measures. ii) in the same third column, risks should be stated for all relevant principles. E.g.: instead of saying "The project will promote healthy soils and empower local farmers" you may say "There's a risk that agrochemical waste may impact soil and water if not managed". iii) the "No further assessment required for compliance" column should only be ticked for those principles for which impacts/risks were not identified. The ESP screening table includes an entry for "Indigenous Peoples" marked "No," with a brief statement that Libya has no legally recognized indigenous peoples under the AF definition. However, the concept note does not explain the basis for this

		conclusion in relation to the preliminary geographic focus and the fact that final site prioritization will occur at Full Proposal stage. In addition, given that distinct ethnic minority communities may be present in parts of Libya (e.g., Amazigh, Tuareg and Tebu communities, where relevant), a brief clarification is needed on how the screening conclusion was reached and how it will be verified and updated (if required) once priority sites/communities are identified. **CR32.** Kindly explain the basis for the "Indigenous Peoples: No" screening conclusion (including how it relates to the preliminary target regions/municipalities). Please also describe how this conclusion will be verified during Full Proposal development once priority sites are confirmed, including whether any distinct ethnic minority communities (e.g., Amazigh, Tuareg and Tebu communities, where present) may be affected or require tailored engagement. If any such groups are identified, kindly explain how culturally appropriate engagement will be undertaken and reflected in the ESMP/ESIA and stakeholder engagement plan.
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.** The Implementing Entity fee is USD 391,705, which is 8.5% of the total budget before fee. The PFG of USD 150,000 is appropriate for a project of this size The PFG fee is lower than 8.5. However, there is a discrepancy between the values in the table and the

		description below for the Design of the Full Project Proposal and the Management Fee. In the table, the amount for the Project design is USD 12,000 while in the description it is USD 10, 000. Similarly, in the Table the amount for the Management Fee is USD 5000, while in the description it is USD 8000. **CR33**: Please correct the inconsistencies between the table and the description below and ensure that both sums do not exceed USD 150,000. **CAR4:** Please confirm if UNDP Libya will be executing the PFG or if WHO Libya will be doing so. If the PFG will be executed by WHO Libya please amend the PFG request form. This clarification is essential for the preparation of the PFG legal agreement.
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)?	**Yes.** The Execution Costs total is USD 437,788, which is 9.5% of the project total budget. However, the Total Project/Program Cost is incorrect in the Project Components and Financing table. **CR34:** Please note that the Total Project/Program Cost is the sum of the total components and execution costs; this must be corrected. You may use the IE and EE fees calculator: https://www.adaptation-fund.org/document/ie-and-ee-fees-calculator/
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** Accreditation Expiration Date: 24 November 2028

Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the Gender Policy of the Fund?	n/a at concept stage
	2. Are there measures for financial and project/programme risk management?	n/a at concept stage
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	n/a at concept stage
	4. Is a budget on the Implementing Entity Management Fee use included?	n/a at concept stage
	5. Is an explanation and a breakdown of the execution costs included?	n/a at concept stage
	6. Is a detailed budget including budget notes included?	n/a at concept stage
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?	n/a at concept stage
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	n/a at concept stage
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	n/a at concept stage
	10. Is a disbursement schedule with time-bound milestones included?	n/a at concept stage

ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Strengthen climate change adaptation and Health system preparedness, readiness and resilience to multi-hazard risks and climate impacts

Country:	Libya
Thematic Focal Area:	Disaster Risk Reduction
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	World Health Organization (WHO)
Executing Entities:	UNDP Ministry of Environment, Ministry of Health, Ministry of Local, Ministry of Agriculture, National Center for Disease Control, National Center for Animal Health, Ministry of Local Government, Environmental Sanitation Affairs
Amount of Financing Requested:	5,000,000 (in U.S Dollars Equivalent)

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

Amount of Requested financing for PFG: 150,000 (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: Click or tap to enter a date.

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

Project/Programme Background and Context:

Provide brief information on the problem the proposed project/programme is aiming to solve. Outline the economic, social development and environmental context in which the project would operate.

Geography: Libya is situated in the southern Mediterranean and is a large country of about 1.76 million km², with roughly 96% of its territory characterized by desert conditions. Libya is bordered by the Mediterranean Sea to the north (across from Italy, Greece, and Malta) with a long coastline stretching 1,770 km. Libya shares borders with Egypt to the east, Sudan to the southeast, Niger and Chad to the south, and Tunisia and Algeria to the west. Libya's main physical features include the Nafusah Plateau and the Al-Jifarah (Gefara) Plain in the northwest, both lying at relatively low elevations near sea level. In the northeast, the Akhdar Mountains also known as the "Green Mountains" with rise to about 900 meters. The remainder of the country is dominated by the vast Saharan plateau, which extends across most of Libya's territory. In the eastern end of the Sahara Desert is located the Nubian Sandstone Aquifer System, the world's largest known fossil water aquifer system, which spans across the south-west and south-east of Libya. This is the source of the Great Man-Made River: the world's largest irrigation project ever built. The water feeding the Man-Made River originate from several wells in Libya, including Alkufra municipality, where it is very superficial and therefore easily accessible.

Historically, Libya was divided into three provinces: Tripolitania in the northwest, Cyrenaica in the east, and Fezzan in the southwest. Today, the country is subdivided into 25 governorates. Libya experiences little and erratic rainfall; only limited areas, such as the Jifara Plain near Tripoli and the Marj Plain near Benghazi, receive enough rainfall for arable farming, and slightly more land is suitable for livestock grazing. Despite these constraints, Libya continues to operate several large-scale agricultural projects supplied by fossil groundwater.[1]

Socio economic:

As of 2024, the country's population stood at 7.2 million, with 81% living in urban areas - most along the coast. According to Libya's National Economic and Social Development Board youth make up some 38 per cent of the population[2].

Libya is classified as an upper-middle-income country, the economy is heavily dependent on hydrocarbons, which account for about 68% of national income, making GDP highly sensitive to production levels and global prices[1] driven by income fluctuations, COVID-19impacts, and recurrent conflict. In 2024, according to the world bank, Libya GDP per capita was estimated at roughly at USD 6,300. At present, there is no official data for the income distribution estimated by the Gini coefficient. However, household survey data from 2022 has found that 7 per cent of Libyans were found to be living below the international poverty line of US$ 2.15 per day.[3] The 2024 Global Multidimensional Poverty Index (MPI) (using 2014 survey data) classifies about 2.0% of Libyans as multidimensionally poor and 11.4% as vulnerable to multidimensional poverty, highlighting pockets of deprivation in housing, employment and access to services despite relatively good national human development indicators[4].

According to the latest World Food Programme Market Price Monitoring, the national Full

[1] World Bank. (2025, June 11). *CLIMATE RISK COUNTRY PROFILE: Libya*.
[2] youth voices: towards a better future for all Libyans, July 2025
[3] UN Common Country Analysis, 2023, Libya
[4] Multidimensional Poverty Index 2024, UNDP, 2024, Libya

Minimum Expenditure Basket (MEB) rose significantly by +8.2 percent in May 2025 to LYD 983.82, marking the highest monthly increase recorded so far in 2025. The increase was primarily driven by sharp price hikes in the western region, along with continued volatility in essential goods across the country, including both food and non-food items. (Annex 1) As per the International Monetary Fund (IMF)'s conclusions at the Article IV Consultation with Libya, there is a strong correlation between ongoing conflict and the sharp decline of Libya's GDP since 2011. The conclusions emphasize that political instability, armed confrontations, and disruptions to vital oil production and exports have significantly undermined the country's economic output. Libya, once among the wealthiest nations in Africa due to its oil revenues, has seen its GDP contract drastically, with periods of near economic paralysis during peak conflict years. The IMF notes that recurring violence has deterred foreign investment, disrupted trade, and led to massive capital flight, all of which have hampered recovery efforts1.

The World Bank's latest comprehensive analysis of economies in fragile and conflict-affected situations (FCS) highlights a deepening economic crisis that has widened global inequality. The report covers 39 countries - including Libya - where average GDP per capita has declined by 1.8% annually since 2020, compared to 2.9% growth in other developing economies. These nations, though home to fewer than 15% of the global population, account for over 420 million people living on less than US $3 a day, a figure expected to rise to 435 million by 2030.

Based on UNDP report, 2023 Libya Human Development Index (HDI) value of 0.721 which put the country in the High human development category, positioning it at 92 out of 193 countries and territories.

Gender analysis:

Violence against Women and Children (VaW), inequalities, poverty and vulnerability

- Based on an analysis conducted by UNDP, Libya has a Gender Inequality Index (GII) value of 0.266 ranking it 65 out of 166 countries in 2022. The index measures gender inequalities in three key dimensions – reproductive health, empowerment, and the labour market.
- In Libya, young people, especially young women, remain largely absent from formal decision-making bodies and governance institutions. Unemployment among youth remains alarmingly high. The labour market indicators show a low participation of Libyan women in the labour force of (25.7%) compared to (79%) for men.[5]
- The 2023 National Youth Survey reported a 38.4% unemployment rate among those aged 15–34, while earlier estimates suggested that youth joblessness reached 51.5% overall and up to 65% in northern urban areas. Historically, unemployment has been even higher among young women (around 70%), despite their comparatively high educational attainment levels.
- While gender equality (SDG5) is codified in many aspects of law, in Libya women's participation has been markedly constrained across political, and economic domains, with those living in rural or tribal communities especially restricted by entrenched social norms. As a result, Libya's standing on the Global Gender Inequality Index has deteriorated significantly, dropping from 41st place out of 162 countries in 2018 to 65th in 2022.[6] Women and girls face significant challenges in accessing social services and economic opportunities, while addressing violence against women remains a significant challenge. Women also remain severely underrepresented in government and other decision-making institutions and processes. Young people are largely excluded from most decision-making processes and institutions, particularly young women. Social and economic marginalization also puts young people at risk of recruitment by armed and criminal groups.[10]
- Climate hazards can have disproportionate impacts on girls. Loss of livelihoods, displacement

[5] "Women's empowerment and gender equality", UNDP Libya
[6] UNICEF Libya Annual Report 2024

and migration from climate-related events often put girls in precarious positions. Gender-based violence and child marriage increase following extreme weather events and disasters. In some countries, the number of marriages of girls ages 11 to 14 increased by 50 per cent in years with heatwaves lasting longer than 30 days[7].

- Female-headed households, internally displaced women, and migrant or refugee women experience heightened economic insecurity and exposure to gender-based violence (GBV). The SIPRI fact sheet highlights that climate shocks, forced displacement, and deteriorating livelihoods amplify GBV risks, especially where access to safe shelters, healthcare, and psychosocial services is limited.[8]
- Violence against women is simultaneously widely prevalent and a very stigmatized topic in Libyan society. There is a lack of accurate data, and it is severely under-reported due to stigma, fear of retaliation. The most common forms of GBV are assaults, conflict related GBV, sexual violence, early and forced marriage, harassment, and human trafficking.

Hazard Mapping:

A multi-sectoral, national, all-hazards health risk profile conducted in Libya in 2024 using the WHO STAR tool found floods, storms, movements of internally displaced persons (IDPs), and the influx of refugees and migrants to be very high risks. High-risk hazards included food- and water-borne diseases, neglected tropical diseases (NTDs), antimicrobial resistance (AMR), and respiratory pathogens with pandemic potential, among others. Libya remains at moderate risk of violent conflict, according to the 2025 INFORM score ranking, which places the country 44th out of 191 countries, with a staggering 6.4 score for lack of coping capacity among governmental institutions. Environmental degradation and climate change exacerbate these hazards, increasing the likelihood of disease emergence. Indeed, Libya has a high INFORM Climate Change Risk Index and borders Niger, Chad, and Sudan - countries all classified with a very high index.

The analysis of geographic hotspots and sectoral vulnerabilities was developed following the IPCC SREX framework, which defines exposure as the presence of people, assets, ecosystems, or services in locations that may be adversely affected by climatic events. Exposure scores were determined by overlaying spatial data on population distribution, infrastructure, economic activity, and ecological sensitivity in relation to the intensity of each identified hazard.

Region	Description	Key Exposed Areas	Exposure Level	Principal Hazards
R1	Northern coastal strip: Tripoli, Benghazi, Misrata, Al Jabal Al Akhdar	Urban settlements, ports, floodplains, estuaries	**Very High**	Flash floods, sea-level rise, saltwater intrusion, coastal erosion
R2	Coastal–semi-arid transition: Misrata, Sirte	Peri-urban areas, dry riverbeds, small farms	**High**	Flash floods, drought, land degradation
R3	Interior arid zone: Jafara Plain, Sirte Basin	Rural towns, wadis, oil facilities	**Medium**	Drought, desertification, infrastructure stress
R4	Hyper-arid south: Fezzan, Murzuq, Kufra	Oasis towns, informal settlements	**Low**	Drought, sandstorms, aquifer depletion
R5	Marine and coastal ecosystems	Coastal lagoons, wetlands, ports	**High**	Sea-level rise, storm surges, acidification

Certain population groups are disproportionately exposed due to socioeconomic conditions and geographic location:

- Urban poor in R1 are clustered in flood-prone informal settlements. Pastoralists in R3–R4 face declining access to water and pasture. Women and children in all regions, particularly R2 and R4, suffer from poor access to health services, limited mobility, and high dependency on

[7] "The climate-changed child: A children's climate risk index supplement", UNICEF, 2023

[8] Climate, Peace and Security Fact Sheet, Norwegian institute of international affairs/The Stockholm International Peace Research Institute, August 2024,

climate-sensitive livelihoods. Urban vulnerabilities are pronounced due to the concentration of population along the coast, particularly in Tripoli, Benghazi, and Misurata, which together host over 40% of the population. Challenges include flash flood risks from inadequate drainage (e.g., in Derna, Tripoli, Benghazi), urban heat stress amplified by the heat island effect, and intermittent water supply from the MMR. Vulnerable groups in informal settlements, including displaced and low-income populations, are at heightened risk. In rural or remote regions such as Murzuq or Alkufra, adaptive infrastructure and basic services remain severely limited. Such limitations are further compounded by extreme isolation and extreme climate events.

Climate change exposure and impact on health:

Vulnerabilities to climate change:

According to the WHO Conference of the Parties (COP30) Special Report on Health and Climate Change released on 14 November 2025 **climate change presents the most significant threat to health in this century.** In alignment with this, climate change represents a major challenge to Libya's sustainable development and economic stability, affecting cities, public and animal health, infrastructure, energy needs and agricultural productivity. The country faces heightened vulnerability to flooding, extreme heat, water shortages, sand and dust storms, desertification, and rising sea levels. Climate change also increases the risk of transmission of infectious diseases such as vector-borne, waterborne, foodborne, airborne, and soilborne diseases.[9]

In addition, Libya has among the lowest levels of preparedness and readiness to effectively respond to these climate impacts. The country ranks 91st in vulnerability and 167th in preparedness out of 185 nations. According to the 2023 Fragile States Index, Libya is classified among the world's most fragile states, ranking 17th out of 179 countries.

Libya is highly vulnerable to the adverse impacts of climate change, Libya's climate is influenced by two contrasting geographic features; the Mediterranean Sea in the north and the Sahara Desert in the south, which together create favourable conditions for sudden shifts in weather patterns across the country.

Raise in temperature: Historical temperature changes (ERA5 dataset) reported an increase of 1.85°C between 1971 and 2020 while the global temperature rose by 0.9°C[10].

Mediterranean Sea: The Mediterranean region is warming 20% faster than global average[11]. This means that the Mediterranean Sea is turning into the fastest warming sea with irreversible changes for marine and human life, with thousands of sea species already migrating and replacing endemic ones[12].

Floods: while Libya is among the most arid countries globally, with a national annual average of approximately 26 mm of rainfall, precipitation has decreased by 1.6 mm per decade from 1971 to 2020. However, extreme precipitation events are expected to occur more often, increasing the risk of flooding and posing threats to infrastructure, public safety, and agricultural systems [13].

The growing vulnerability to climate change and extreme weather events became tragically evident on 10 September 2023, when Mediterranean Storm Daniel struck Libya's coast. The storm caused the collapse of two aging dams, leading to severe flooding, extensive infrastructure damage, over 52,000 people displaced, and at least 5,900 reported deaths. Floods have also

[9] Mora C, McKenzie T, Gaw IM, et al. Over half of known human pathogenic diseases can be aggravated by climate change. Nature Clim Chang 2022; 12: 869–75

[10] World Bank. (2025, June 11). *CLIMATE RISK COUNTRY PROFILE: Libya*.

[11] Climate change in the Mediterranean

[12] Mediterranean is turning into the fastest warming sea with irreversible changes for marine and human life, WWF article, 2021

[13] World Bank. (2025, June 11). *CLIMATE RISK COUNTRY PROFILE: Libya*.

been shown to increase violence among the population[14]. Floods significantly heighten vulnerabilities among affected populations, particularly women and girls. Women may face an increased risk of violence and child marriage due to displacement, widowhood, and worsening socioeconomic conditions. These events disrupt livelihoods, strain community resources, and exacerbate existing social and economic inequalities, creating an environment where both violence and harmful coping mechanisms, such as early marriage, are more likely to occur.

Saltwater intrusion and seagrass loss: coastal areas such as Jeffara Plain, Tripoli, Sirt, and Benghazi are particularly affected. Excessive freshwater extraction, combined with climate change, has led to saltwater intrusion into aquifers, particularly in regions like Derna, where freshwater availability has decreased by 75% since 1960.

Sand and dust storms (SDS) have intensified in frequency and geographic spread, particularly in Libya's arid and hyper-arid interior. Between 2010 and 2022, the number of SDS days per year has increased by approximately 30%, with events occurring year-round but peaking in spring and late summer. These storms frequently reduce visibility to less than 500 meters, disrupt air and road traffic, and pose serious health risks through respiratory complications. The interior basins of Murzuq, Sabha, and Wadi Al Hayat are among the most affected, with over 100 SDS days per year reported in some locations.

Coastal erosion has become a critical hazard along Libya's Mediterranean littoral, affecting densely populated cities such as Tripoli, Misrata, Benghazi, and Derna. Erosion rates now average 30–50 cm per year in several vulnerable segments, with some localities exceeding 1 meter per year, particularly where coastal dunes and wetlands have been disturbed.

This erosion is driven by storm surge activity, unregulated urban expansion, and declining sediment supply from inland catchments. Ports, seawalls, roads, and residential areas have been repeatedly damaged during winter cyclonic storms.

Water and food security:

Libya faces significant natural constraints on water availability, compounded by climate change and human pressures. There are no perennial surface water resources; the country depends heavily on fossil aquifers such as the Nubian Sandstone and Northwestern Sahara systems.

The Great Man-Made River has enabled the expansion of irrigated agriculture, particularly in coastal areas and oasis regions of Fezzan and South Cyrenaica. Despite agriculture not being a main source of revenue at the national level, it plays a key role in livelihoods and remains an important source of income in rural areas and areas with arable land, for an estimated 22% of the population. However, agricultural productivity remains constrained by limited renewable water resources, harsh climatic conditions, and poor soil quality. Consequently, Libya depends on imports for about 75% of its food requirements, leaving it highly susceptible to climate-induced disruptions in both domestic and global food supply chains. Livestock production continues to be an essential livelihood activity.

Climate change impacts such as rising temperatures, prolonged droughts, erratic rainfall, flooding, and soil degradation, have severely affected Libya's agriculture, livestock, and fisheries sectors. These changes are undermining rural livelihoods and threatening food security[15].

In addition, unsustainable extraction and weak governance threaten long-term water security. The Man-Made River (MMR) supplies around 80% of freshwater but is vulnerable to technical failures and conflict-related disruptions given the inequity in water management in aggravating a deepening the sense of socioeconomic exclusion.

Libya's climate vulnerabilities also have a transboundary dimension. Shared aquifers require joint

[14] Lancet countdown report 2025

[15] Climate, Peace and Security Fact Sheet, Norwegian institute of international affairs/The Stockholm International Peace Research Institute, August 2024

governance, while climate-induced migration from sub-Saharan Africa through Libyan porous borders places pressure on local services. Informal cross-border trade, a livelihood source for southern communities, is increasingly disrupted by extreme events. Shared desert ecosystems are under strain from overgrazing and prolonged drought.
A fragile electricity grid, reliant on gas, experiences frequent outages during heatwaves, while the private sector remains underdeveloped and lacks capacity for green innovation.

Projected Vulnerability under the Shared Socioeconomic Pathway SSP5 (2025–2045)

Libya's vulnerability to climate change is shaped not only by its environmental exposure, but also by deep-rooted social and economic inequalities that affect the adaptive capacity of its people. The intersection of hazard-prone geographies, fragile livelihoods, and structural marginalization places specific population groups-particularly women, youth, pastoralists, internally displaced persons (IDPs), and the urban poor-at the center of climate risk.

Region	Urban Poor	Pastoralists	Women	Children	Exposure Level (Summary)
R1 – Coastal urban corridor	Very High (90)	Low (30)	Very High (90)	Very High (90)	High multi-hazard exposure due to floods, heatwaves, and infrastructure failure
R2 – Peri-urban/agro-pastoral	High (70)	Medium (50)	High (70)	High (70)	Transitional zone under land pressure and rapid urban expansion
R3 – Rural interior	Medium (50)	High (70)	High (70)	High (70)	Increasing drought and service gaps
R4 – Southern oases and deserts	Low (20)	Very High (80)	Medium (40)	Medium (40)	Sparse but highly fragile, water-dependent livelihoods.

Source: CRA Libya, 2025

Health threats from climate change:
The climate and environmental changes have direct and indirect consequences on human health, including compromised access to safe drinking water, food insecurity displacement, and heightened mental health issues such as anxiety and depression[16]. In addition, there is an increasing prevalence of zoonotic diseases such as leishmaniasis and Rift Valley fever, whose distribution and incidence are influenced by climatic factors and environmental changes[17]. Furthermore, the country faces significant challenges from environmental contamination (metal, soil, air, and water pollution) and a growing burden of antimicrobial resistance (AMR), which further strains the already vulnerable health system[18].

Infectious diseases: in Libya climate change increase the risk vector borne disease such as rift valley fever, several serological studies have indicated the presence of **Rift Valley Fever** Virus (RVFV) in regions including Algeria, Morocco, Tunisia. The zoonotic cutaneous **Leishmaniasis** caused by L. major remains a public health concern[19] with a significant paediatric burden[20].

According to the latest Lancet Countdown report, climate change–driven shifts in temperature and humidity have a direct impact the ecology of leishmaniasis vectors (sand flies). These environmental changes alter their behaviour, metabolism, and development, prolonging their

[16] SIPRI. (2024, August 3). *Climate, Peace and Security Fact Sheet: Libya 2024*.
[17] World Health Organization. (n.d.). *Zoonotic disease: emerging public health threats in the Region*.
[18] Al-Hammami, M. A., & Al-Hammami, A. M. (2024, March 19). *Assessing One Health capacities for transboundary zoonotic disease surveillance in Libya*. PLOS Global Public Health, 4(3), e0002005.
[19] Karmaoui A, Sereno D, El Jaafari S, Hajji L. Seasonal Patterns of Zoonotic Cutaneous Leishmaniasis Caused by L. major and Transmitted by Phlebotomus papatasi in the North Africa Region, a Systematic Review and a Meta-Analysis. Microorganisms. 2022 Dec 2;10(12):2391.
[20] A. El Buni, A. Ben darif. Cutaneous leishmaniasis in Libya: epidemiological survey in Al-Badarna. parassitologia. 1996;38:579-580.

infectious period and consequently extending the transmission window leading to an increased risk of disease spread. In addition, the predicted leishmaniasis risk for 2015–24 increased by 29·6% compared with 1951–60. The regions at greatest risk include Africa, Asia, and the Eastern Mediterranean.
Furthermore, flooding can cause wastewater overflows, septic system failures, and combined sewer discharges, leading to contamination of nearby surface and groundwater sources. Such contamination increases the risk of waterborne diseases caused by bacterial pathogens like ***Vibrio spp***, including cholera. Recent evidence shows that Vibrio bacteria can thrive in saltwater, freshwater, and brackish environments, creating ideal conditions for their proliferation and transmission following storms and floods[21].
The country's geographic location, bordering several African nations, also increases its susceptibility to transboundary health threats, including climate sensitive zoonotic and vector-borne diseases[22].
Mental Health: As per WHO's policy brief on Mental health and Climate Change: Climate change is increasingly having stronger and longer-lasting impacts on people, which can directly and indirectly affect their mental health and psychosocial well-being. Several environmental, social and economic determinants of mental health are negatively affected by climate change.
climate change also exacerbates many social and environmental risk factors for mental health and psychosocial problems, and can lead to emotional distress, the development of new mental health conditions and a worsening situation for people already living with these conditions.
Therefore, in preparing for and responding to this growing emergency, there is an increasing need for the provision of mental health and psychosocial support (MHPSS). In Libya, impacts of climate change have been reported on mental Health. Climate-related anxiety, depression, and grief are more prevalent in Libya than in other Arab countries, with high levels of obsessive-compulsive symptoms and physical stress due to environmental changes[23]. Various environmental impacts have been observed in Libya including saltwater intrusion, sea-level rise, loss of seagrass due to marine heatwaves.
The projected increased heat poses health hazard for human and animals highlighting the urgent need for adaptive responses.

Climate change and child health:
Climate change is impacting the health and well-being of children and adolescents, affecting their mental and physical health, nutrition, safety and security, access to learning opportunities, as well as family support and connectedness. In 2021, UNICEF released the landmark Children's Climate Risk Index (CCRI), laying out for the first time specific children's vulnerabilities across eight climate and environmental shocks. Libya exposure to climate and environmental factors is scored at 5.5 (high), with an overall CCRI of 4.4 and placing Libya on the 97th position on the score ranking, significantly worse than neighbouring country Tunisia, in position 121.

Climate change and people with disabilities (PWD):

As per UNHCR report in April 2021, 80% of PWD live in low and middle income countries many of which are highly climate vulnerable. Only 5-15% of people who require assisted devices and technologies have access to them .
PWD are 4 times more likely to die in the event of a disaster[24]. During flood, they are still too often left behind and during heatwaves, the existing health inequalities are exacerbated, especially in communities where disability is still highly stigmatized like Libya. According to the UNDRR, only

[21] Lipp EK, Huq A, Colwell RR. Effects of global climate on infectious disease: the cholera model. Clin Microbiol Rev. 2002 Oct;15(4):757-70. doi: 10.1128/CMR.15.4.757-770.2002. PMID: 12364378; PMCID: PMC126864.
[22] Al-Hammami, M. A., & Al-Hammami, A. M. (2024, March 19). Assessing One Health capacities for transboundary zoonotic disease surveillance in Libya. PLOS Global Public Health, 4(3), e0002005.
[23]Arnout BA. An epidemiological study of mental health problems related to climate change: A procedural framework for mental health system workers. WOR. 2023 Jul 11;75(3):813–35
[24] How climate change impacts people with disabilities, HI article

one in four people with disabilities can easily follow evacuation instructions in the event of a disaster, and only 11% say they are aware of the existence of a disaster management plan in their community. They do not have sufficient information about the risks associated with disasters and how to react to protect themselves. When people with disabilities manage to evacuate, they also face particular protection risks. They are more exposed to violence, exploitation and abuse in emergency shelters, or more generally in situations of forced displacement. Young women with disabilities, for example, are particularly at risk of violence. 75% of people with disabilities feel excluded from the humanitarian response and are discriminated and can't meet their health and livelihood needs.

The projected decrease in rainfall combined with more frequent and intense precipitation events affect flooding risk. Flash floods will become more frequent due to intense rain events combined with overall drier conditions.[25] These climatic conditions will lead to higher transmission of vector-borne diseases such as Malaria, Dengue and Leishmaniasis, waterborne disease such as such as cholera and acute diarrhoea. Enhancing water and sanitation infrastructure, alongside strengthening disease surveillance systems, can significantly reduce vulnerability. These measures also provide important mitigation co-benefits by preventing disease outbreaks and enabling timely detection and response during health emergencies.

Taken together, these hazards create a clear climate–health risk chain in Libya. Increasing temperatures, prolonged heatwaves and sand and dust storms intensify respiratory and cardiovascular stress, degrade air quality and disrupt already fragile service delivery. More frequent extreme rainfall and flash floods, particularly in the coastal and peri-urban corridors, damage health infrastructure, contaminate water supplies and trigger spikes in water- and vector-borne diseases. Sea-level rise and coastal erosion increase salinization of groundwater and reduce safe water availability for coastal communities. These shocks disproportionately affect women, children, people with disabilities, internally displaced persons, migrants, refugees and poor urban and rural households, who are more exposed, have fewer coping options and face greater barriers in accessing care. The project is explicitly designed as an adaptation response to this climate–hazard chain, focusing on reducing climate-induced health risks rather than addressing generic health system gaps.

The prioritization of interventions is directly informed by Libya's spatial climate-risk patterns. The Tripoli–Benghazi–Derna coastal corridor (R1) faces recurrent flash floods, coastal inundation and storm surge events that severely disrupt health services and contaminate water sources. Central peri-urban basins (R2) experience rapid stormwater accumulation and flood-related infrastructure damage, while the southern arid belt (R3–R4) is increasingly exposed to extreme heat, prolonged drought and high sand-and-dust-storm frequency, all of which heighten climate-sensitive disease transmission and service delivery interruptions. By focusing on these high-risk geographies, the project ensures that adaptation investments target the areas where climate hazards most directly threaten the continuity, safety and accessibility of essential health services.

These challenges are exacerbated by prolonged political instability, armed conflict, and a weakened healthcare infrastructure[26],[27]. It is recognized that Libya's vulnerabilities to climate change is not solely determined by the frequency or magnitude of climatic hazards, but by a complex interplay of environmental degradation, climate-sensitive health risks, and a fragile health system and a set of long-standing contextual conditions that shape the capacity to respond and adapt necessitating an integrated and adaptive response.

The country's health system has been severely weakened by years of conflict, corruption, and

[25] World Bank. (2025, June 11). CLIMATE RISK COUNTRY PROFILE: Libya.
[26] World Bank. (2025, June 11). *CLIMATE RISK COUNTRY PROFILE: Libya*.
[27] European Commission. (n.d.). Action Document for Towards a resilient health system in Libya.

infrastructure damage. Surveillance systems are fragmented, laboratory capacity is limited, and access to healthcare remains unequal, particularly in remote and conflict-affected regions.

These interconnected environmental and governance vulnerabilities underscore the urgency of a multi-sectoral, all hazard and One Health–centered approach that integrates climate resilience, public health protection, and sustainable resource management at both national and subnational levels.
The project is well-positioned to address Libya's acute climate-health vulnerabilities through a coherent multisectoral One Health framework, and is strongly aligned with the Adaptation Fund's priorities, particularly in the areas of climate-resilient health systems, disease surveillance, infrastructure adaptation, and institutional capacity building. As the concept note advances, specific emphasis will be placed on enhancing gender responsiveness, ensuring locally led adaptation, and embedding sustainable institutional pathways to deliver long-term results.

WHO will provide overall coordination and project management. WHO will lead the health-related technical aspects, including the climate-sensitive disease surveillance, early warning systems strengthening early warning systems, and enhancing preparedness and operational readiness capacities for climate-related health risks across the multisectoral workforce. WHO will also provide technical leadership on the WASH upgrade components in health facilities. UNDP will lead the implementation of all infrastructure-related components of the project, including the installation of solar energy systems and environmental WASH interventions.

Beyond infrastructure, UNDP, in collaboration with WHO, will support capacity-building for local institutions, particularly municipal-level health and environmental authorities, and facilitate inter-institutional coordination through the operationalization of the One Health framework, ensuring compliance with Environmental and Social Safeguards (ESS). As part of its sustainability mandate, UNDP will work closely with the Ministry of Finance and relevant sectors to ensure the continuity of key systems such as surveillance, rapid response, and facility maintenance beyond the life of the project.

Operation and Maintenance (O&M) arrangements: For solar energy systems, the project will establish standardized O&M protocols, including annual performance checks, inverter/battery replacement cycles, and remote monitoring through local service providers. For climate-resilient WASH upgrades, municipal environmental sanitation units will receive technical training on routine WASH safety inspections, chlorination schedules, and water-quality monitoring. Surveillance and EWS platforms will include long-term hosting arrangements with NCDC, with dedicated IT focal points responsible for system maintenance, data quality assurance, and software updates. These arrangements ensure that the physical and digital assets installed remain functional and fully utilized after project closure.

In parallel, WHO, as the lead technical executing entity, will support the development of the National Health Adaptation Plan (NHAP), provide technical assistance to the Ministry of Health and One Health coordination bodies, and guide the integration of climate-sensitive health priorities into surveillance, preparedness, and service delivery systems. Together, UNDP and WHO will facilitate stakeholder engagement, ensure intersectoral coordination, and promote institutional uptake of climate-resilient health interventions.

The One Health approach, recognizing the intrinsic connection between human, animal, and environmental health, provides a crucial framework for addressing these multifaceted challenges. In November 2024 the Ministry of Health, Ministry of Environment, Ministry of Agriculture and Ministry of Local Governance signed a One Health Memorandum of Understanding (MoU) demonstrating a growing commitment to this integrated approach.

However, significant gaps remain in intersectoral collaboration, diagnostic capabilities, and robust surveillance systems and the integration of environment and climate change-related risks. Despite recent efforts led by the Ministry of Environment (MoE) to assess climate risks and produce preliminary analyses under the national Climate Change Assessment and NDC adaptation chapter (2025), a comprehensive Vulnerability and Adaptation (V&A) assessment has not yet been conducted in Libya. Existing studies have focused primarily on climate exposure and hazards, providing valuable insights into temperature, precipitation, and drought projections; however, systematic evaluation of population sensitivity, adaptive capacity, and sectoral vulnerability, particularly for the health, sector remains incomplete.

Coordination mechanisms: A Project Steering Committee chaired by the Ministry of Health and co-chaired by the Ministry of Environment will provide strategic direction and ensure alignment with national climate and health priorities. The NCDC and NCAH will lead technical coordination for surveillance and One Health, while municipal authorities will oversee facility-level implementation and local service continuity. WHO and UNDP will act as joint implementing entities, coordinating through a unified workplan, shared monitoring framework, and quarterly review meetings. Clear reporting lines, TORs, and data-sharing protocols will be established to ensure coherence across sectors and administrative levels.

Institutionalization of capacity-building: All training modules - including climate–health surveillance, climate-resilient facility management, and One Health coordination - will be developed as standardized curricula housed within MoH training departments and NCDC/NCAH technical directorates. Universities and training institutes (e.g., University of Tripoli, Agricultural Research Centre) will be engaged to host the climate–health curriculum as part of pre-service and in-service education. The One Health MoU will serve as the institutional home for continued multisectoral coordination, ensuring that competencies developed under the project translate into lasting institutional capacity.

Integration into national and municipal budgeting systems: The project will support the Ministry of Finance and line ministries to embed recurrent Operations & Maintainance (O&M) costs for solar systems, WASH infrastructure, and surveillance platforms into annual budget submissions and medium-term expenditure frameworks. Municipalities in high-risk regions will be supported to include climate–health service continuity measures in their local development budgets, ensuring predictable financing for routine maintenance, consumables, and staff assignments. This approach aligns with Libya’s NDC and NAP planning cycles, strengthening long-term institutional ownership.

Private sector engagement and long-term operation and maintenance: The project will strategically engage the private sector to ensure technically sound delivery and long-term sustainability of key investments. For solar PV installations and associated electrical works in health facilities, local and national firms will be contracted through competitive procurement processes, with performance-based service agreements covering installation, commissioning, and multi-year maintenance. This will support the emergence of a domestic green energy service market while ensuring reliable operation of critical systems under climate stress. For WASH upgrades in health facilities, the project will work with private suppliers and service providers across the water, sanitation and waste management value chains (e.g. pumps, filtration units, storage systems, waste-handling contractors). Procurement will be structured to favor quality-assured technologies and providers able to offer after-sales support, while building the capacity of municipal authorities and facility managers to supervise contracts and monitor service quality.

Digital solutions for climate-sensitive disease surveillance and early warning will similarly draw on private-sector expertise, including software firms and telecom operators where relevant, under

clear data protection and public-sector ownership arrangements. Wherever feasible, the project will promote employment opportunities for youth and women within installation, operation and maintenance teams, working with vocational institutions and local businesses to strengthen relevant skills.

Long-term operation and maintenance will be underpinned by a mix of public funding and service contracts with private firms or PPP-style arrangements, depending on the local context. The project will support the Ministry of Health, municipalities and facility managers to define O&M plans and budget lines for solar and WASH systems, and to structure multi-year service contracts that gradually transition from project-financed support to domestically financed maintenance, thereby safeguarding the durability of climate-resilient infrastructure beyond the project lifetime.

This project proposal aims to build upon these existing foundations, leveraging the One Health approach to enhance Libya's adaptive capacity and resilience to climate change and its associated health impacts.

Through a joint Vulnerability and Adaptation assessment, the project Steering Committee, supported by WHO and UNDP, will prioritize high-risk areas for the piloting of this phase I project.

Project/Programme Objectives:

List the main objectives of the project/programme.

Goal: *Strengthen a climate-resilient health system capable of preparing for, responding to and reducing the impacts of climate-related multi-hazard threats.*

Objectives:

1- ***Strengthen the evidence base to predict and mitigate health impacts of climate change*** *Enhance data generation, analysis, to better predict, and address the health impacts of climate change. This objective focuses on improving the understanding of Health system vulnerabilities by identifying climate-sensitive health risks and vulnerable populations, supporting evidence-informed policies and interventions. It aligns with WHO GPW 14 priorities on strengthening data and intelligence for health and contributes to the development of national climate and health observatories for early warning systems under a One Health approach.*

2- ***Enhance health system climate resilience through policy integration and multisectoral collaboration*** *Improve the capacity of health systems to anticipate, prepare for, and respond to climate-sensitive health risks, aligning with WHO GPW14 indicators on climate-resilient health systems and fostering effective collaboration among human health, animal health, and environmental sectors.*

3- ***Improve the resilience and sustainability of healthcare facilities in the face of climate change*** *Strengthen health infrastructure to withstand climate-related hazards by integrating climate-resilient design, sustainable energy solutions, and robust WASH systems, ensuring continuous, safe, and equitable service delivery under extreme weather conditions.*

4- ***Strengthen disease surveillance and early warning systems to better prepare, respond, and recover from potential extreme climate events:*** establish and strengthen integrated surveillance and early warning systems for climate-sensitive zoonotic and vector-borne diseases, for early detection and rapid response.

5- ***Enhance workforce*** **preparedness and operational readiness *capacity* to climate-related health risks:** build the capacity of health professionals and communities in climate change adaptation and One Health principles

Project/Programme Components and Financing:

To strengthen results orientation, each component will include concrete, climate-relevant outputs beyond institutional processes. These will include operational systems (e.g., climate-informed early-warning platforms), climate-resilient infrastructure upgrades (solarized and flood-resilient health facilities), interoperable digital surveillance tools, and measurable service-continuity improvements. Training and awareness-raising activities will be linked to tangible outputs such as SOPs, guidelines, infrastructure standards, and functional rapid-response capacities.

Project/ Programme Components	**Expected Outcomes**	**Expected Concrete Outputs**	**Amount (US$)**
1. Strengthen the evidence base to predict and mitigate health impacts of climate change	1.1 Evidence-based climate and health risk information is regularly generated, disseminated and used for decision making	Output 1.1.1 - National V&A, multi-hazard and health infrastructure risk assessments completed Includes the completion of: • Climate–health Vulnerability & Adaptation (V&A) assessment • Multi-hazard risk assessment for health • Climate-resilient health infrastructure risk assessment	**440,000** 120,000
		Output 1.1.2 - Climate–health adaptation strategies and planning tools developed Includes national and sub-national adaptation strategies aligned with NAP/NDC.	100,000
		Output 1.1.3 - Technical capacity strengthened for monitoring climate variability and health-relevant climate projections Includes training and installation/use of analytical tools to track rainfall, drought, floods, temperature extremes.	140,000
		Output 1.1.4 - Climate–health evidence products disseminated and accessible to decision-makers and communities Includes dissemination of assessment reports, policy briefs, geospatial maps, and lessons learned.	80,000

2. *Enhance health system climate resilience through policy integration and multisectoral collaboration*	2.1. Climate change is systematically integrated into national and sub-national health sector policies, planning frameworks and regulations		**620,000**
		Output 2.1.1 – National Health Adaptation Plan developed	120,000
		Output 2.1.2 – Comprehensive stakeholder mapping and institutional analysis conducted	80,000
		Output 2.1.3 – Policy briefs, high-level dialogues and sensitization activities implemented to support climate-health integration	80,000
		Output 2.1.4 – Institutional capacity of MoH and relevant agencies strengthened to integrate climate change into health sector planning	120,000
		Output 2.1.5 – All-Hazards Prevention, Preparedness and Response Plan developed	100,000
		Output 2.1.6 – Public Health Emergency Management (PHEM) policy aligned with One Health and climate-related threats	40,000
		Output 2.1.7 – National multisectoral Public Health Emergency Operations Center (PHEOC) strengthened with SoPs and digital solutions such as e-PHEM for climate-related health emergencies	80,000
	2.2. A functional One Health coordination mechanism strengthens multi-sectoral collaboration on climate sensitive health risks		**240,000**
		Output 2.2.1 – One Health national coordination platform established and operational	80,000
		Output 2.2.2 – Regular One Health Task Force meetings convened to support coordinated climate-health action	80,000
		Output 2.2.3 – Mechanisms for sustainable multisectoral planning and policy integration across human, animal and environmental health strengthened	80,000

3. Improve the resilience and sustainability of healthcare facilities in the face of climate change	3.1. Healthcare facilities deliver uninterrupted, climate resilient and environmentally sustainable essential services		**1,350,000**
		Output 3.1.1 – Epidemic-Ready Primary Healthcare (ERPHC) and enhanced hospital resilience model piloted in high-risk priority locations	210,000
		Output 3.1.2 – Health workforce capacities strengthened for climate-sensitive disease management, IPC, GBV-sensitive care and Psychological First Aid	180,000
		Output 3.1.3 – Facility performance-improvement and mentorship systems institutionalised for continuous climate-health readiness	120,000
		Output 3.1.4 – Surveillance, reporting, and referral linkages between PHC facilities and national/local authorities strengthened for climate-sensitive diseases	140,000
		Output 3.1.5 – Solar energy systems installed in high-risk health facilities to ensure climate-resilient and uninterrupted essential services	450,000
		Output 3.1.6 – Climate-resilient WASH systems upgraded in priority health facilities to safeguard service continuity under climate stress	250,000
4. Strengthen disease surveillance and early warning systems for climate related health risks	4.1. Climate-sensitive disease surveillance, early warning and response systems detect and respond to climate-related health risks in a timely manner	Output 4.1.1 – Climate-informed early warning and surveillance systems assessed and strengthened for climate-sensitive diseases	**660,000** 80,000
		Output 4.1.2 – Routine surveillance systems adapted under the One Health approach to include climate-relevant information	90,000
		Output 4.1.3 – Disease intelligence capacities enhanced through strengthened event-based surveillance (EBS)	110,000
		Output 4.1.4 – Community-Based Surveillance (CBS) expanded for climate-sensitive health events with participation of CSOs, women, youth, schools and vulnerable groups	110,000
		Output 4.1.5 – Interoperable and integrated electronic surveillance platform developed for human–animal–environmental health with real-time data sharing	180,000

		Output 4.1.6 – Climate-sensitive disease surveillance plans, SOPs and simulation exercises developed and institutionalized	90,000
	4.2 Surveillance and EWS are institutionalized and sustainably operated at national and sub-national levels	Output 4.2.1 – Results-based monitoring and reporting system for climate-sensitive surveillance institutionalized and aligned with national accountability frameworks	**220,000** 120,000
		Output 4.2.2 – Climate-resilient vaccine delivery and cold-chain systems strengthened to ensure continuity of essential immunization services during climate-related disruptions	100,000
5. Enhance workforce preparedness and operational readiness capacity to climate-related health risks	5.1. A Multisectoral and multidisciplinary workforce is equipped with the skills and competences to prevent, detect and respond to climate-related health risks	Output 5.1.1 – Core climate–health competencies for multisectoral and multidisciplinary workforce defined and institutionalized	**440,507** 120,000
		Output 5.1.2 – Training modules on climate-sensitive health risks and adaptation developed and delivered to national and sub-national health workforce	80,507
		Output 5.1.3 – Primary healthcare workers trained and supported to detect, report and respond to climate-sensitive diseases	120,000
		Output 5.1.4 – All-hazard and One Health rapid response teams trained and equipped for climate-sensitive health emergencies	120,000
	5.2 Sustained institutional capacity is established at national and subnational levels to deliver climate–health training, preparedness and operational readiness programmes.	Output 5.2.1 – Climate–health training curricula institutionalized within national and subnational training systems (MoH, NCDC, NCAH, municipal training units)	**200,000** 80,000
		Output 5.2.2 – Inclusive knowledge-transfer and institutional readiness mechanisms established and operational at national and subnational levels, supported by UNDP	120,000

6. Project/Programme Execution cost	437,788
7. Total Project/Programme Cost	4,170,507
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)	391,705
Amount of Financing Requested	5,000,000

Projected Calendar:

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

Milestones	Expected Dates
Start of Project/Programme Implementation	Jan 2027
Mid-term Review (if planned)	Jul 2028
Project/Programme Closing	Dec 2029
Terminal Evaluation	Oct 2030

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. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

Overarching climate hazard–exposure–impact chain: Libya's climate risk profile is driven by a set of escalating hazards - extreme heat, intense and erratic rainfall, storm surges, sand and dust storms, and prolonged drought - whose frequency and severity are increasing under all available climate projections. These hazards disproportionately affect densely populated coastal cities (Tripoli, Derna, Benghazi), peri-urban zones along dry wadis, and fragile southern communities in Fezzan and Kufra. High population exposure intersects with systemic vulnerabilities: overstretched health facilities, degraded water systems, limited early warning capacity, and high dependence on climate-sensitive livelihoods. This combination produces amplified climate–health impacts including vector-borne disease expansion, waterborne disease outbreaks following floods, respiratory complications from SDS, infrastructure failure, and reduced operational continuity of essential health services. The project's adaptation measures are designed to break this chain by reducing exposure, addressing structural vulnerabilities, and strengthening system-wide resilience at national and local levels.

In direct response to the climate hazard–exposure–impact pathways described above, the project is structured to intervene at the points where climate risks most acutely disrupt health service continuity and population well-being. This project proposes a multi-faceted approach to enhance Libya's climate change adaptation and health resilience, grounded in the One Health framework. Each component is designed to deliver concrete adaptation activities that directly contribute to building resilience within the health sector and vulnerable communities.

Alignment with Libya's NDC Adaptation Priorities: The project's focus on climate-resilient health systems, climate-sensitive surveillance, and hazard-responsive WASH and energy systems directly reflects Libya's NDC 2025 (NAP section), which identifies "public health and heat resilience" as one of the six national priority systems for 2030–2035, with a target of ensuring that 50% of health facilities meet climate-resilient standards and that heat-alert coverage exceeds 80%. The NDC also highlights the need for regionally differentiated adaptation measures across the five Climate-Related Risk Regions (C-RRR), emphasizing high risks for coastal cities (R1), peri-urban transitional zones (R2), and fragile interior and southern communities (R3–R4). This concept note operationalizes these priorities by targeting high-exposure regions with low adaptive capacity and by strengthening surveillance, early warning, and service continuity in line with the NDC's overarching adaptation vision.

Adaptation additionality: In the absence of climate change, Libya's health system would continue to contend with routine structural constraints - fragmented surveillance, uneven service delivery, limited emergency preparedness - but these challenges would remain broadly manageable within standard public health programming. Climate change fundamentally modifies this baseline: extreme heat, intensified sand and dust storms, coastal flooding, aquifer salinization, and shifts in vector and pathogen ecology now generate new and additional climate-attributable health burdens that outstrip existing system capacities. These hazards drive service disruptions, accelerate outbreaks of leishmaniasis, RVF and waterborne diseases, and compromise the safety and functionality of health facilities. The interventions proposed in this project - climate-resilient WASH and energy systems, climate-informed surveillance architecture, health-sector policy integration, and multisectoral One Health preparedness - represent the additional costs required exclusively because climate risks have intensified. They enable Libya to maintain essential health services, anticipate and respond to climate-sensitive outbreaks, and protect vulnerable populations from escalating climate impacts - outcomes that cannot be achieved under a business-as-usual development trajectory.

Localization of climate risks and justification of priority areas: Climate impacts are not evenly distributed across Libya and require geographically differentiated adaptation measures. The northern coastal corridor - Tripoli, Benghazi, Derna, Misrata - faces recurrent flash floods, coastal erosion, saltwater intrusion, and storm-related infrastructure collapse, making it a priority zone for climate-resilient health facilities, WASH upgrades, and emergency preparedness. The transitional central zone (Sirte basin, Jafara plain) experiences alternating drought and extreme rainfall, resulting in unstable water availability and heightened vector-borne disease transmission, justifying strengthened integrated surveillance and climate-informed early warning. The Fezzan and Murzuq regions in the south are acutely exposed to extreme heat, SDS, aquifer depletion, and chronic service gaps, necessitating investment in solar energy, essential

service continuity, and workforce readiness. The project's targeting strategy therefore focuses on high-exposure areas with low adaptive capacity, ensuring adaptation benefits reach the geographic centres of climate-driven health risk.

Final beneficiaries and equitable benefit distribution: The project prioritizes population groups whose vulnerability is amplified by climate hazards - urban poor in coastal flood-prone areas (Tripoli, Derna, Benghazi), pastoralist and agro-pastoral communities in drought-affected central and southern regions, IDPs and migrants living in high-exposure informal settlements, women and girls facing elevated climate-related protection risks, and persons with disabilities who experience disproportionate barriers to evacuation, access to services, and emergency response. Equitable benefit distribution is ensured through geographic targeting of high-exposure locations (as identified in the hazard and vulnerability mapping), gender-responsive and disability-inclusive design of services, and structured engagement with local authorities, women's groups, CSOs and municipal health teams. All major investments - solarization, climate-resilient WASH, surveillance strengthening, and workforce training - will apply beneficiary-selection criteria that prioritize high-risk communities and systematically track who benefits through sex-, age- and disability-disaggregated indicators. This guarantees that adaptation benefits flow first to groups with the highest climate-induced health burden and lowest adaptive capacity.
The project will apply a structured approach to equitable benefit distribution, ensuring that women, girls, persons with disabilities, internally displaced persons, migrants, and remote communities are systematically reached. This will be achieved through targeted facility selection in high-vulnerability areas, partnership with municipal health teams and CSOs for outreach, and inclusive communication channels tailored to groups with mobility, language or access barriers. All beneficiary-level indicators will be disaggregated by sex, age and disability to ensure monitoring of equity outcomes.

The selection of intervention targets across health facilities and workforce groups is grounded in Libya's updated climate-risk profiling and the geographic concentration of vulnerability in the coastal, southern and desert regions, particularly Derna, Benghazi, Tripoli, Sirte, Sabha, Kufra and Murzuq. These areas experience recurrent flooding, heatwaves, vector expansion and water scarcity, and collectively host the most vulnerable population. Based on the risk mapping and the service-delivery footprint in these hotspots, the project will prioritize a defined subset of health facilities including 80 primary health care centers and 06 hospitals for climate-resilient upgrades, solar energy systems, and strengthened WASH infrastructure and Epidemic-Ready Standard (ERPHC).

Similarly, targets for workforce capacity-strengthening for 1500 human health, animal health and environmental professionals with distribution derived from the distribution of existing national structures, in the high-risk municipal catchment areas. These targeted interventions ensure that limited resources are directed toward facilities and professionals where climate hazards most severely threaten service continuity and public health outcomes, thereby maximizing the efficiency, equity and climate-adaptation value of the investment.

WHO estimates that each Primary Health Care Centre and each Hospital have on average a catchment population of 10,000 people and 45,000 people respectively. Moreover, the proposed programme aims to train 1500 people.

Therefore, in total the programme will target 1,070,500 direct beneficiaries (80*10,000)+(6*45,000)+1,500=1,071,500.

Linking climate projections to the adaptation intervention mix: Projected temperature increases of 2–3°C by mid-century, combined with more frequent heatwaves, directly threaten the functionality of health facilities, increase electricity demand, and elevate risks of heat-related illness - justifying the installation of solar energy systems and climate-resilient WASH to maintain service continuity. Intensifying extreme rainfall events and more frequent flood pulses, similar to Storm Daniel, increase the probability of waterborne disease outbreaks and infrastructure damage; this underpins the need for climate-informed surveillance systems, all-hazards preparedness planning, and early warning mechanisms. Increasing SDS frequency and atmospheric particulate loads heighten respiratory burdens and complicate AMR risks, supporting the inclusion of workforce training, IPC strengthening, and One Health surveillance. Shifts in vector ecology driven by warmer temperatures and longer transmission seasons justify integrated zoonotic and vector-borne disease monitoring and rapid response capacities. Each intervention in this CN therefore corresponds directly to documented and projected climate hazards, translating Libya's climate projections into targeted, evidence-based adaptation measures.
The vulnerability groups identified in the climate-risk assessment - women, girls, persons with disabilities, IDPs, migrants and remote rural households - will be explicitly integrated into the design of component activities and outputs. This includes applying inclusive design standards for WASH and energy upgrades, ensuring accessible early-warning communication formats, prioritizing high-risk communities in facility selection, and embedding gender-responsive and disability-inclusive considerations in all workforce training and surveillance functions. Each component will therefore operationalize vulnerability criteria rather than treating them as background context.
Based on this climate-risk architecture and the justified adaptation priorities above, the project is structured around four mutually reinforcing components that address the most critical climate-health vulnerabilities.

The **Theory of Change** follows a sequential adaptation pathway, where each component removes a specific bottleneck in the climate - health resilience chain: (i) improved climate-health intelligence and institutional coordination generate actionable information; (ii) this information informs climate-resilient facility upgrades and service-continuity measures; (iii) strengthened surveillance and early-warning systems enable anticipatory response; and (iv) an adequately trained multisectoral workforce operationalizes these systems. Overall, the components function as an interlinked set of measures that reinforce each other within a unified adaptation pathway.

IF Libya expands its climate–health intelligence base, strengthens coordination across human, animal and environmental sectors, and embeds climate risk considerations into facility operations, **AND IF** surveillance, early-warning and response systems are modernized and supported by a workforce equipped with the skills to interpret risk signals and act decisively, **THEN** the health system will progressively shift from reactive crisis management to anticipatory, climate-resilient service delivery, **BECAUSE** evidence-informed planning, climate-proofed infrastructure, interoperable surveillance platforms, and capable frontline teams jointly address the structural weaknesses that currently allow climate hazards to escalate into service disruptions, unchecked outbreaks, and avoidable

health impacts.

Alignment with NDC pathway and results logic: The sequencing in this Theory of Change mirrors Libya's NDC long-term adaptation framework, which outlines a staged pathway from (i) institutional and data foundations (2025–2030), to (ii) accelerated sectoral adaptation in water, food and health systems (2030–2040), and (iii) full mainstreaming of climate resilience across national development planning (2040–2050+). The TOC components - climate intelligence, surveillance strengthening, climate-resilient facility upgrades, and workforce readiness – correspond directly to the NDC's priority system "Public Health and Heat Resilience", which targets 50% climate-resilient health facilities and national early-warning coverage by 2035. By ensuring that each component contributes to these NDC outcomes, the project delivers measurable progress toward Libya's nationally defined adaptation goals.

<u>Component 1.</u> - **Strengthen the evidence base to predict and mitigate health impacts of climate change**

Component 1 strengthens Libya's climate-health intelligence system by generating authoritative, decision-ready evidence on climate hazards, health vulnerabilities and service-delivery risks. The component establishes Libya's first comprehensive analytical foundation for climate-informed health planning, combining national and sub-national assessments, infrastructure risk diagnostics and multi-hazard characterization. It further builds technical capacity to interpret climate projections relevant to health and ensures that evidence is regularly disseminated to ministries, municipalities, and communities. This component lays the foundation for all subsequent components by ensuring that policies, facility upgrades, surveillance systems, and workforce readiness are grounded in accurate, climate-responsive information.

Climate hazard-vulnerability-impact-adaptation response linkage: Libya faces rapidly intensifying climate hazards - extreme heat, erratic and concentrated rainfall, flash floods, sand and dust storms, coastal inundation, and prolonged drought - which increasingly strain public health systems. These hazards intersect with weak surveillance, degraded water infrastructure, and limited early warning capacity, resulting in delayed outbreak detection, climate-attributable disease burdens, and repeated service disruptions. The absence of authoritative climate–health risk data and facility-level vulnerability diagnostics prevent ministries from planning, budgeting, or deploying resources effectively. Strengthening the national evidence base directly reduces vulnerability by enabling Libya to anticipate climate-sensitive health risks, prioritize high-risk regions, and guide climate-resilient policies, investments and operational planning.

Outcome 1.1 - Evidence-based climate and health risk information is regularly generated, disseminated and used for decision making

Outcome 1.1 ensures that Libya shifts from reactive crisis response to proactive, data-driven climate-health governance. By institutionalizing the routine generation, interpretation, and dissemination of climate-health risk information, the outcome closes a critical national gap: fragmented, outdated, and non-climate-informed data streams. Decision-makers across health, environment, local governance and disaster management will have access to harmonized assessments, facility vulnerability diagnostics, geospatial mapping and climate-relevant projections -

enabling evidence-based prioritization, resource allocation and policy development.

Output 1.1.1 - National V&A, multi-hazard and health infrastructure risk assessments completed

This output delivers Libya's first integrated national suite of climate–health assessments, including the Vulnerability & Adaptation (V&A) assessment, multi-hazard risk assessment for health, and climate-resilient infrastructure risk diagnostics. Together, these assessments identify priority hazards, vulnerable populations, and high-risk health facilities, forming the evidence base for all subsequent planning and investment decisions.

Output 1.1.2 – Climate-health adaptation strategies and planning tools developed Includes national and sub-national adaptation strategies aligned with NAP/NDC.

This output translates analytical findings into national and sub-national adaptation strategies aligned with Libya's NAP and NDC processes. It provides structured decision-support tools - such as risk-informed planning guidelines and prioritization frameworks - to ensure systematic integration of climate risks into health sector planning.

Output 1.1.3 - Technical capacity strengthened for monitoring climate variability and health-relevant climate projections

This output develops institutional capacity to track hazard trends and interpret climate projections through training and the use of analytical tools for rainfall variability, floods, drought indices, SDS frequency, temperature extremes, and relevant climate - health indicators.

Output 1.1.4 - Climate–health evidence products disseminated and accessible to decision-makers and communities

This output ensures that assessments, maps, policy briefs, and lessons learned are produced in user-friendly formats and disseminated to ministries, municipalities, and communities. Accessible evidence products enable national and local stakeholders to act on climate-health risks and support informed public engagement.

<u>Component 2.</u> - **Enhance health system climate resilience through policy integration and multisectoral collaboration**

Component 2 strengthens Libya's institutional architecture for climate-resilient health governance. It ensures that climate risks are systematically integrated into national and sub-national health policies, planning instruments, preparedness systems and governance mechanisms. The component supports the development of the National Health Adaptation Plan, modernizes public health emergency management frameworks, and strengthens the national PHEOC to address climate-related hazards. In parallel, it operationalizes a functional One Health coordination mechanism connecting human, animal and environmental health sectors, enabling coherent surveillance, response and policy development. Together, these interventions reduce institutional vulnerability and ensure that climate resilience becomes an inherent feature of national health governance.

Climate hazard-vulnerability-impact-adaptation response linkage: Libya's health governance structures are increasingly strained by climate-driven events such as flash floods, extreme heatwaves, coastal inundation, drought-induced water shortages, and heightened SDS frequency. These hazards trigger climate-attributable disease outbreaks, service disruptions, and operational failures. Yet national health policies, preparedness plans and regulatory frameworks remain largely non-climate-informed, with

no systematic integration of hazard projections, climate-health risks considerations. In 2024, Libya officially launched the One Health approach marking a significant milestone in the country's commitment to addressing health threats at the human-animal-environment interface, including those driven by climate change. Coordination among human, animal and environmental health institutions is crutial to enhance the country's ability to anticipate and manage climate-sensitive disease threats. Strengthening policy integration and multisectoral governance directly reduces vulnerability by ensuring that climate risks are embedded into national health planning, coordination structures, emergency preparedness and decision-making systems.

Outcome 2.1 - Climate change is systematically integrated into national and sub-national health sector policies, planning frameworks and regulations

> *Outcome 2.1 addresses the core institutional gap: Libya's health sector currently lacks climate-informed planning frameworks, updated preparedness systems, and regulatory mandates to manage climate-sensitive risks. Integrating climate change systematically into health policies, emergency management structures, budgeting processes, and sectoral governance enables the Ministry of Health and partners to anticipate climate impacts, allocate resources efficiently, and design risk-informed health interventions. This outcome establishes the institutional backbone for climate-resilient health decision-making.*

Output 2.1.1 – National Health Adaptation Plan developed

Delivers Libya's first dedicated health adaptation plan, aligning health sector priorities with national NAP/NDC commitments and climate-health risk assessments ensuring coherence with Libya's broader climate policy architecture. The assessment will outline targeted adaptation measures to Climate vulnerabilities.

Output 2.1.2 – Comprehensive stakeholder mapping and institutional analysis conducted

Provides an evidence base of actors, mandates, coordination gaps and institutional capacities required to support climate-resilient health governance.

Output 2.1.3 – Policy briefs, high-level dialogues and sensitization activities implemented to support climate-health integration

Generates policy-relevant knowledge products and convenes decision-makers to mainstream climate risks into sectoral planning and policy discourse.

Output 2.1.4 – Institutional capacity of MoH and relevant agencies strengthened to integrate climate change into health sector planning

Improves technical and institutional capacities of MoH, NCDC, NCAH, MoEnv and municipal entities to integrate climate-risk considerations into policies, budgeting and planning. Activities will include workforce development on climate–health vulnerability, climate-sensitive disease surveillance, risk communication, and adaptation planning; establishment of institutional guidelines and decision-support tools; and provision of targeted technical assistance to embed climate-risk considerations in national and subnational planning cycles.

Output 2.1.5 – All-Hazards Prevention, Preparedness and Response Plan developed

Provides an updated, climate-informed national plan to guide preparedness and emergency operations across climate-sensitive hazards.

This output will deliver an updated national All-Hazards Prevention, Preparedness and Response Plan that is explicitly informed by climate projections, climate-sensitive hazards, and health system vulnerability assessments. The plan will define roles,

responsibilities, and coordination arrangements across health, animal health, environment, food safety, and municipal authorities. It will include risk-based preparedness measures for extreme heat, floods, sandstorms, vector-borne diseases, waterborne outbreaks, and climate-exacerbated zoonotic threats. The updated plan will also incorporate operational readiness actions, early warning triggers, contingency planning, logistics and supply-chain readiness, and integration with the national disaster risk management architecture. This will ensure that Libya's emergency management system is equipped to handle the growing frequency and severity of climate-related health emergencies.

Output 2.1.6 – Public Health Emergency Management (PHEM) policy aligned with One Health and climate-related threats to modernize Libya's PHEM policy framework to fully integrate One Health principles and ensure it is responsive to climate-sensitive health risks. It will update national policy directives to reflect multisectoral coordination requirements, inter-operability between human, animal, and environmental health surveillance systems, and the incorporation of climate-risk intelligence (including heat-health thresholds, vector ecology changes, and environmental monitoring). The revised policy will guide preparedness, response, and recovery operations across sectors; clarify governance relationships between MoH, NCDC, NCAH, MoEnv, and crisis-management authorities; and standardize procedures for information sharing, joint risk assessment, and decision-making during climate-related emergencies. This will establish a coherent national framework for managing increasingly complex and interconnected health threats.

Output 2.1.7 – National multisectoral Public Health Emergency Operations Center (PHEOC) strengthened with SoPs and innovative digital solution for climate-related health emergencies

Ensures that the PHEOC can coordinate preparedness and response for climate-related health emergencies through updated SoPs, communication protocols, incident-management workflows across human health, veterinary services, environmental authorities, municipal services, and protection sectors and multisectoral coordination mechanisms. In addition, by equip the PHEOC with an electronic Public Health Emergency Management (e-PHEM) for alert management, incident coordination, and resource tracking and information sharing across sectors providing an end-to-end digital solution that enhance the emergency management capabilities, including structured alert management, triage, verification and risk assessment and the overall incident coordination by creating a unified ecosystem.

Outcome 2.2 - A functional One Health coordination mechanism strengthens multi-sectoral collaboration on climate sensitive health risks

> *Outcome 2.2 operationalizes a functional One Health coordination mechanism to manage climate-sensitive health risks that span human, animal and environmental domains. Climate change is accelerating zoonotic spillover risks, vector ecology shifts, waterborne disease outbreaks and environmental contamination. A coherent multisectoral platform is required to jointly assess risks, share information, and coordinate early warning and response. This outcome ensures structured collaboration, regular joint analysis, and harmonized policy development across sectors.*

Output 2.2.1 – One Health national coordination platform operational

Creates a formal mechanism linking health, animal health, agriculture, environment, water, and municipal sectors for climate-sensitive health risk governance. The platform will provide a structured space for multisectoral decision-making on climate-sensitive

health risks, enabling institutions to jointly assess vulnerabilities, prioritize adaptation needs, and design coordinated interventions. It will enhance information-sharing that and ensure regular engagement and accountability.

Output 2.2.2 – Regular One Health Task Force meetings convened to support coordinated climate-health action

Institutionalizes routine multisectoral engagement to coordinate and sustain multisectoral coordination on surveillance, joint risk assessment, early warning, preparedness, and policy development for climate-sensitive health threats. Meetings will enable real-time information exchange between MoH, NCDC, NCAH, MoEnv, agriculture services, municipal authorities, and other relevant stakeholders. The Task Force will review climate-related disease trends, identify emerging risks, activate coordinated preparedness actions, and ensure that decisions are aligned across sectors.

Output 2.2.3 – Mechanisms for sustainable multisectoral planning and policy integration across human, animal and environmental health strengthened

Ensures long-term integration of One Health principles into national planning, enabling cohesive climate–health risk management across institutions.

<u>Component 3.</u> - **Improve the resilience and sustainability of healthcare facilities in the face of climate change**

Component 3 enhances the structural and operational resilience of healthcare facilities so they can maintain essential services under intensifying climate hazards. The component introduces the Epidemic-Ready Primary Healthcare (ERPHC) model, integrates climate-sensitive IPC and case management, upgrades WASH and energy systems, and institutionalizes facility-level performance and mentorship mechanisms. It strengthens linkages between primary healthcare facilities, local authorities and national surveillance systems to ensure rapid detection and reporting of climate-sensitive diseases. Together, these interventions ensure that facilities in high-risk areas can function reliably during floods, heatwaves, water shortages, SDS events and outbreaks, thereby protecting populations most exposed to climate-induced health risks.

Climate hazard-vulnerability-impact-adaptation response linkage: Healthcare facilities in Libya - particularly in coastal cities (Tripoli, Benghazi, Derna), flood-prone wadi corridors, and heat-stressed southern regions - face recurrent climate shocks including extreme heat, power outages, flash floods, water scarcity, sand and dust storms, and climate-attributable disease surges. These hazards compromise electricity-dependent equipment, IPC systems, vaccine cold chain integrity, medical supply safety, and the operational continuity of essential health services. Climate change amplifies service interruptions by increasing energy demand, destabilizing water availability, and accelerating the spread of vector-borne, waterborne, and respiratory diseases. Strengthening facility-level resilience through solar power, climate-resilient WASH, integrated service-continuity systems, epidemic readiness, and performance-improvement mechanisms directly reduces vulnerability and ensures uninterrupted delivery of essential, climate-resilient services.

Outcome 3.1 - Healthcare facilities deliver uninterrupted, climate resilient and environmentally sustainable essential services

Outcome 3.1 reduces frontline vulnerability by ensuring that healthcare facilities are equipped, powered, supplied and staffed to deliver uninterrupted essential services under climate stress. It integrates climate resilience across three

dimensions - physical infrastructure (solar, WASH), operational systems (ERPHC, IPC, referral pathways), and human resources (climate-sensitive clinical competencies) - allowing facilities to withstand climate shocks, maintain service continuity and contribute to early detection and response of climate-sensitive diseases. This outcome anchors the broader adaptation pathway by making climate-resilient service delivery a routine and sustainable feature of Libya's health system.

Output 3.1.1 – Epidemic-Ready Primary Healthcare (ERPHC) and enhanced hospital resilience model piloted in high-risk priority locations

Pilots a standardized model for climate- and epidemic-ready PHC, including baseline assessments across selected PHC facilities, integrating service continuity measures, IPC, risk communication, resilient cold chain including solar direct-drive, remote alarms and climate-sensitive response protocols.

Output 3.1.2 – Health workforce capacities strengthened for climate-sensitive disease management, IPC, Outbreak Response Immunization (ORI) within 7–14 days using microplans that prioritize flood-displaced populations, IDPs and migrant hotspots and GBV-sensitive care and Psychological First Aid

Ensures that frontline staff have the competencies to manage climate-sensitive disease syndromes, maintain IPC during extreme weather events, and provide gender- and protection-sensitive care under climate-induced stress.

Output 3.1.3 – Facility Performance-improvement and mentorship systems institutionalised for continuous climate-health readiness

Establishes facility-level systems for regular readiness assessments, mentorship cycles and continuous improvement of climate-health performance standards.

Output 3.1.4 – Surveillance, reporting, and referral linkages between PHC facilities and national/local authorities strengthened for climate-sensitive diseases

Improves reporting channels, data flow, and referral systems so that climate-sensitive health events detected at facility level are transmitted rapidly to municipal and national authorities.

Output 3.1.5 – Solar energy systems installed in high-risk health facilities to ensure climate-resilient and uninterrupted essential services

Provides climate-resilient, low-carbon energy supply to maintain service continuity, cold chain reliability and essential equipment operation during heatwaves and grid failures.

Output 3.1.6 – Climate-resilient WASH systems upgraded in priority health facilities to safeguard service continuity under climate stress

Strengthens water safety, sanitation and hygiene infrastructure to withstand climate shocks such as floods, drought, and water contamination, ensuring safe and reliable WASH services.

<u>Component 4.</u> - **Strengthen disease surveillance and early warning systems for climate related health risks**

Component 4 enhances Libya's capacity to anticipate, detect and respond rapidly to climate-sensitive health threats. It strengthens surveillance architecture across three levels: system architecture (EWS, interoperability, One Health integration), data and intelligence (routine surveillance, EBS, CBS), and governance and sustainability (institutionalization, cold-chain resilience). This results in an early-warning ecosystem capable of converting climate information into actionable

public health signals. By embedding surveillance and EWS capacities into national and sub-national systems, the component ensures that Libya can prevent climate-related outbreaks from escalating into public health emergencies.

Climate hazard-vulnerability-impact-adaptation response linkage: Climate change intensifies Libya's disease risks through rising temperatures, shifting vector ecology, erratic rainfall, flash floods, sand and dust storms, and prolonged droughts. These hazards accelerate transmission of leishmaniasis, RVF, malaria risk re-emergence, cholera, acute diarrheal diseases, and respiratory illnesses linked to SDS. Surveillance systems in Libya - fragmented across human, animal and environmental sectors - lack climate-relevant indicators, real-time data exchange, interoperable platforms, and sub-national activation capacity. Climate hazards therefore translate directly into delayed detection, slow response, higher morbidity and wider outbreaks. Strengthening early warning systems (EWS), event-based and community-based surveillance, and One Health data integration directly reduces vulnerability by enabling anticipatory action, faster outbreak containment, and climate-informed decision-making.

Outcome 4.1 - Climate-sensitive disease surveillance, early warning and response systems detect and respond to climate-related health risks in a timely manner

Outcome 4.1 reduces climate-related health vulnerability by equipping Libya with integrated surveillance and early-warning systems that can identify threats early and trigger rapid response. It links climate projections with disease intelligence, modernizes surveillance workflows, expands community-level detection, and operationalizes an interoperable One Health platform. These improvements significantly shorten detection–notification–response cycles during climate shocks, improving disease control and protecting vulnerable populations.

Output 4.1.1 – Climate-informed early warning and surveillance systems assessed and strengthened for climate-sensitive diseases

Completes a systematic assessment of climate-sensitive EWS and strengthens core functions for priority diseases affected by heat, floods, drought and SDS.

Output 4.1.2 – Routine surveillance systems adapted under the One Health approach to include climate-relevant information

Incorporates climate-linked indicators, risk thresholds and harmonized data standards into routine surveillance across human, animal and environmental sectors.

Output 4.1.3 – Disease intelligence capacities enhanced through strengthened event-based surveillance (EBS)

Improves rapid detection of unusual health events and climate-sensitive syndromes through strengthened reporting triggers and verification mechanisms and platform integration. It will enhance real-time detection of extreme-weather-related health events, vector anomalies, animal die-offs, and other early warning signs.

Output 4.1.4 – Community-Based Surveillance (CBS) expanded for climate-sensitive health events with participation of CSOs, women, youth, schools and vulnerable groups

Expands community-level detection capacity, ensuring early reporting of climate-sensitive events, with inclusive engagement of high-risk groups. CBS will improve sensitivity in hard-to-reach and underserved areas.

Output 4.1.5 – Interoperable and integrated electronic surveillance platform developed for human–animal–environmental health with real-time data sharing

Establishes a digital One Health platform integrating data from NCDC, NCAH, MoE

environmental units and municipalities to enable real-time risk analytics.

Output 4.1.6 – Climate-sensitive disease surveillance plans, SOPs and simulation exercises developed and institutionalized

Operationalizes climate-informed surveillance planning with SOPs and simulation exercises to ensure readiness for extreme weather and climate-related outbreaks.

Outcome 4.2 - Surveillance and EWS are institutionalized and sustainably operated at national and sub-national levels

> *Outcome 4.2 ensures long-term continuity of surveillance and early warning systems by embedding them in national institutions, budgeting frameworks and service-delivery mechanisms. It strengthens accountability structures, operational budgeting, maintenance systems and cold-chain resilience so that critical surveillance functions continue beyond the project lifecycle.*

Output 4.2.1 – Results-based monitoring and reporting system for climate-sensitive surveillance institutionalized and aligned with national accountability frameworks

Integrates climate-sensitive surveillance monitoring into national systems, with performance indicators, reporting lines and budget submissions aligned to MoH, NCDC and municipal structures.

Output 4.2.2 – Climate-resilient vaccine delivery and cold-chain systems strengthened to ensure continuity of essential immunization services during climate-related disruptions

Strengthens cold-chain power reliability, storage resilience, and distribution pathways to ensure uninterrupted vaccine delivery under heatwaves, floods and outages.

<u>Component 5.</u> - **Enhance workforce preparedness and operational readiness capacity to climate-related health risks**

> *Component 5 focuses on developing a climate-ready, multisectoral workforce capable of sustaining essential services and responding effectively under worsening climate conditions. It strengthens competencies across human, animal and environmental health sectors, integrates climate-change content into national training systems, and operationalizes rapid-response readiness at national and subnational levels. The component also institutionalizes training systems within MoH, NCDC, NCAH, MoE and municipal training units - ensuring permanent, recurring capacity-building beyond the project period. Through inclusive knowledge-transfer systems, it expands access for women, youth and vulnerable groups, creating a sustained national capability to manage climate-health risks.*

Climate hazard-vulnerability-impact-adaptation response linkage: Climate change is already increasing the operational demands on Libya's health workforce. Extreme heat, intensified sand and dust storms, rapid-onset floods, vector ecology shifts, and prolonged droughts create conditions for more frequent and severe outbreaks of leishmaniasis, RVF, diarrheal diseases, respiratory illnesses and heat-related morbidity. However, frontline health workers, municipal authorities, veterinary services, environmental officers and rapid-response teams lack the competencies, tools and multisectoral coordination capacities needed to operate effectively under climate shocks. This capacity deficit magnifies delays in detection, weakens response efficiency, and limits service continuity - especially in high-risk regions and underserved communities. Strengthening the skills, readiness and multisectoral coordination of the workforce directly reduces vulnerability by ensuring that Libya has trained teams capable of preventing, detecting, and responding to climate-sensitive health threats.

Outcome 5.1 - A Multisectoral and multidisciplinary workforce is equipped with the skills and competences to prevent, detect and respond to climate-related health risks

Outcome 5.1 directly strengthens Libya's adaptive capacity by equipping the health, veterinary, environmental and municipal workforce with the knowledge and operational skills required to manage climate-driven health emergencies. It builds core competencies in climate-risk management, surveillance, outbreak control, IPC, gender- and GBV-responsive care, PFA and One Health coordination. These competencies reduce delays in detection, improve response quality, and ensure continuity of essential services during extreme climate events.

Output 5.1.1 – Core climate–health competencies for multisectoral and multidisciplinary workforce defined and institutionalized

Establishes national competency standards for health, animal health, environmental and municipal personnel for climate-sensitive preparedness and response.

The competencies will guide workforce development, training standards, job descriptions, supervisory tools and institutional performance monitoring, ensuring a common baseline for workforce readiness across Libya.

Output 5.1.2 – Training modules on climate-sensitive health risks and adaptation developed and delivered to national and sub-national health workforce

Develops climate–health curricula and delivers structured training for multisectoral and multidisciplinary workforce including human health, animal health workers, environmental officers and municipal emergency teams.

Output 5.1.3 – Primary healthcare workers trained and supported to detect, report and respond to climate-sensitive diseases

Strengthens PHC personnel capacities in surveillance, case management, IPC and referral pathways for diseases exacerbated by climate shocks. It enhances PHC service continuity and ensures that community-level health systems remain functional during extreme weather events and climate-sensitive outbreak response.

Output 5.1.4 – All-hazard and One Health rapid response teams trained and equipped for climate-sensitive health emergencies

Prepares multidisciplinary rapid-response teams to operate during extreme weather, outbreaks and climate-triggered emergencies. It provides practical field training, equipment packages, simulation exercises, and SoPs to ensure operational readiness and coordinated deployment under all-hazard conditions.

Outcome 5.2 - Sustained institutional capacity is established at national and subnational levels to deliver climate–health training, preparedness and operational readiness programmes

Outcome 5.2 ensures long-term sustainability by embedding climate–health training systems into the institutional fabric of MoH, NCDC, NCAH and municipal authorities. This institutionalization transforms workforce capacity-building from a project-dependent activity into a recurring, government-owned function. Inclusive knowledge-transfer mechanisms ensure continuity of skills across successive cadres of health and multisectoral personnel.

Output 5.2.1 – Climate–health training curricula institutionalized within national and subnational training systems (MoH, NCDC, NCAH, municipal training units)

Formal integration of training materials into MoH training departments, NCDC/NCAH technical units and municipal training centers.

Output 5.2.2 – Inclusive knowledge-transfer and institutional readiness mechanisms established and operational at national and subnational levels, supported by UNDP

Ensures ongoing capacity-building through mentorship systems, rotation models, municipal-level training hubs and mechanisms for women and youth inclusion - supported by UNDP.

Implementation arrangements

Initial mapping of roles and responsibilities of executing entities

The project will be jointly implemented by the World Health Organization (WHO), serving as the Implementing Entity and a technical Executing Entity, and the United Nations Development Programme (UNDP), serving as an Executing Entity. Roles are assigned based on each organization's comparative advantage and global mandate, ensuring technical rigor, operational efficiency and strong institutional anchoring.

WHO will provide overall project implementation oversight and lead all **health-sector technical functions**, ensuring alignment with international standards, national health priorities and strategies and the One Health framework. WHO's role spans evidence generation, surveillance systems, workforce development, and emergency preparedness.

At component level, WHO will:

- **Component 1 – Evidence base and climate–health intelligence**
  Lead the technical design and execution of climate–health Vulnerability and Adaptation assessments, multi-hazard health risk assessments, and health infrastructure risk diagnostics. WHO will ensure methodological rigor, quality assurance, and integration with national health information systems.
- **Component 2 – Policy integration and multisectoral collaboration**
  Lead the formulation of the National Health Adaptation Plan, the climate-informed All-Hazards Prevention, Preparedness and Response Plan, and the alignment of Public Health Emergency Management (PHEM) policy with One Health and climate-related health threats. WHO will provide technical leadership for strengthening the PHEOC, including SOPs, incident management workflows, and operational readiness for climate-related health emergencies. WHO will lead the overall coordination of the One Health Sub-Task under the Health Sector Coordination and ensure collaboration and integration with relevant sectors under the UNSDCF.
- **Component 4 – Disease surveillance and early warning systems**
  Lead the strengthening of climate-sensitive disease surveillance, early warning, event-based surveillance (EBS), community-based surveillance (CBS), and the operationalization of interoperable One Health surveillance platforms. WHO will ensure integration of climate-relevant indicators, SOPs, simulation exercises, and outbreak response protocols.
- **Component 5 – Workforce preparedness and operational readiness**
  Lead the development of climate–health competency frameworks, training modules, and rapid response team preparedness under the One Health approach. WHO will ensure institutionalization of training curricula within MoH, NCDC, NCAH, and subnational health systems.

WHO will also lead overall technical reporting to the Adaptation Fund and ensure coherence across components.

UNDP will act as an Executing Entity with a **focused delivery and systems-strengthening role**, supporting infrastructure resilience, governance mechanisms, results-based management, and sustainability pathways. UNDP's engagement is deliberately targeted to areas where its development, infrastructure, and institutional-strengthening mandate adds value.

At component level, UNDP will:

- **Component 2 – Policy integration and multisectoral collaboration**

  Support the establishment and operationalization of the **One Health national coordination platform**, including institutional coordination mechanisms, stakeholder engagement processes, and long-term multisectoral governance arrangements. UNDP will support integration of climate–health priorities into broader national planning and coordination structures.

- **Component 3 – Climate-resilient healthcare infrastructure**

  Lead the implementation of **solar energy systems and climate-resilient WASH infrastructure** in prioritized health facilities. This includes procurement, installation, supervision of works, and establishment of operation and maintenance arrangements, in close coordination with the Ministry of Health and municipal authorities. These investments will ensure uninterrupted service delivery under climate stress.

- **Component 4 – Surveillance sustainability and accountability**

  Lead the **design of results-based monitoring and reporting systems** for climate-sensitive surveillance and early warning, ensuring alignment with national accountability frameworks, budgeting processes, and long-term system sustainability. This includes integration of performance indicators, reporting lines, and institutional ownership beyond the project lifecycle.

Across components, UNDP will also support institutional capacity-building at subnational level, sustainability planning, and linkages to national budgeting and governance systems, ensuring that climate-resilient investments and systems are maintained after project completion.

Coordination and complementarity. WHO and UNDP will coordinate through a unified workplan, shared results framework, and joint steering mechanisms led by the Ministry of Health. Clear division of labor, formalized TORs, and information-sharing protocols will ensure complementarity between health-sector technical leadership (WHO) and infrastructure, governance, and systems-strengthening support (UNDP).

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 is designed to generate substantial economic, social, and environmental benefits, with a emphasis on the vulnerable communities. Adherence to the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy is paramount, ensuring that potential negative impacts are systematically avoided or mitigated.

Economic Benefits:

- **Reduced healthcare burden and costs:** By enhancing health system climate resilience (Component 1) and strengthening disease surveillance and Early Warning (Component

3), the project will significantly reduce the incidence and severity of climate-sensitive diseases. This proactive approach will lead to substantial savings in healthcare expenditures for individuals, households, and the national health system, freeing up resources for other critical development needs.

- **Enhanced livelihoods and economic stability:** The improved resilience of healthcare facilities (Component 2) ensures continued access to essential services, preventing economic disruptions caused by health crises. Furthermore, a healthier, more resilient population is better equipped to participate in economic activities, contributing to overall productivity and stability. The project's focus on capacity building (Component 4) will also enhance the skills of the workforce, potentially leading to new economic opportunities in climate-resilient sectors.
- **Increased investment and development opportunities:** A more stable and climate-resilient health sector can attract further investment in health infrastructure and services, fostering long-term economic growth. The project's emphasis on sustainable practices, such as solar energy in healthcare facilities, can also stimulate local green economies.

Social Benefits:

- **Improved public health outcomes and well-being:** The primary social benefit is the direct improvement of public health outcomes. This includes reduced morbidity and mortality from climate-sensitive diseases, enhanced access to resilient healthcare services, and improved mental well-being through targeted support for climate-affected populations. The project will contribute to a healthier and more productive society.
- **Strengthened community resilience and empowerment:** By building the capacity of health professionals and communities (Component 4) and fostering multisectoral collaboration (Component 1), the project empowers communities to take ownership of their health and adaptation strategies. This increased self-reliance and adaptive capacity will enable vulnerable communities to better withstand and recover from climate shocks.
- **Gender equality and women's empowerment:** The project will actively promote gender equality and women's empowerment throughout its design and implementation. Women often face disproportionate impacts from climate change due to their roles in households and communities, and their limited access to resources and decision-making power. The project will ensure:
  - **Equitable participation:** Women will be actively involved in all stages of the project, from planning and decision-making (e.g., in policy dialogues and V&A assessments) to implementation (e.g., as trained health workers or community leaders).
  - **Gender-sensitive training:** Training modules (Component 4) will be designed to address the specific needs and vulnerabilities of women, including their roles in water management, food security, and caregiving, and will promote their leadership in adaptation initiatives.
  - **Targeted interventions:** Specific interventions, such as improved WASH facilities in healthcare settings (Component 2), will directly benefit women and girls by reducing their burden of collecting water and improving hygiene conditions and to preventing disease.
  - **Data disaggregation:** All monitoring and evaluation efforts will disaggregate data by gender to track impacts and ensure equitable benefits are achieved.
- **Support for vulnerable groups:** The project will prioritize interventions in areas and for communities most vulnerable to climate change, including internally displaced persons (IDPs), migrants, refugees and those in remote or marginalized areas. Specific attention will be given to children, the elderly, and individuals with pre-existing health conditions, who are often more susceptible to climate-related health risks. The All-Hazards

Prevention, Preparedness and Response Plan (Component 1) will specifically consider the needs of these groups.

- **Enhanced social cohesion:** The emphasis on multisectoral collaboration and community engagement through the One Health approach will foster greater understanding, trust, and cooperation among different stakeholders and community groups, strengthening social cohesion in a post-conflict setting.

Environmental Benefits:

- **Reduced environmental degradation:** By integrating climate change into health policies (Component 1) and strengthening surveillance and early warning systems (Component 3), the project indirectly contributes to better environmental management. A healthier population is better positioned to engage in environmental stewardship.
- **Sustainable resource management:** The installation of solar systems in healthcare facilities (Component 2) promotes the use of renewable energy, reducing reliance on fossil fuels and lowering the carbon footprint of the health sector. Upgraded WASH facilities (Component 2) will also contribute to more sustainable water use and waste management within healthcare settings.
- **Improved ecosystem health:** While not a primary focus, the overall strengthening of health systems and the promotion of a One Health approach can indirectly contribute to improved ecosystem health by fostering a greater understanding of the interconnectedness of human, animal, and environmental well-being.

Avoiding and mitigating negative impacts: The project is designed with a strong commitment to avoiding and mitigating potential negative environmental and social impacts, in full compliance with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy. A comprehensive Environmental and Social Impact Assessment (ESIA) will be conducted during the full proposal development phase, and an Environmental and Social Management Plan (ESMP) will be developed and implemented during the project lifecycle. Key mitigation measures include:

- **Rigorous Environmental Screening:** All project activities, particularly those involving infrastructure improvements (Component 2), will undergo thorough environmental screening to identify and assess potential risks such as waste generation, energy consumption, or water usage. Mitigation measures will be integrated into the design and implementation, such as proper waste disposal protocols for healthcare facilities and efficient water use practices.
- **Social safeguards and participatory approaches:** The project will ensure continuous and inclusive consultations with all relevant stakeholders, including vulnerable groups, to identify potential social risks and ensure that activities are culturally appropriate and responsive to local needs.
- **Gender Analysis and Action Plan:** A detailed gender analysis will inform a Gender Action Plan, which will identify and address gender-specific risks (e.g., increased workload for women, unequal access to benefits) and ensure that project activities promote gender equality and women's empowerment. This plan will include specific indicators for monitoring and reporting.
- **Capacity building on safeguards:** Project staff, executing entities, and relevant government partners will receive comprehensive training on the Adaptation Fund's ESP and Gender Policy, as well as national environmental and social regulations, to ensure effective implementation of safeguards.
- **Compliance with National Standards and International Best Practices:** Where national technical standards are established, the project will adhere to them. In their

absence or inconsistency, international best practices (e.g., WHO guidelines for healthcare waste management, solar panel installation standards) will be applied to ensure the highest environmental and social performance.

- **Monitoring and reporting:** Regular monitoring and reporting will track compliance with environmental and social safeguards, allowing for adaptive management and timely corrective actions to address any unforeseen negative impacts. This includes disaggregated data collection to ensure equitable benefit sharing.

  By integrating these measures, the project aims to maximize its positive impacts while effectively managing and minimizing any potential negative consequences, ensuring a sustainable and equitable approach to climate change adaptation in Libya.

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

The proposed project is highly cost-effective, delivering significant health and climate adaptation benefits within the allocated budget of US$ 5 million. The cost-effectiveness stems from several factors:

- **Leveraging existing structures:** The project will build upon existing national health and environmental frameworks and institutions in Libya (e.g., Ministry of Environment, Ministry of local government, NCDC, NCAH), minimizing the need for establishing new parallel structures and maximizing the utilization of existing capacities. The recent One Health MoU provides a strong foundation for intersectoral collaboration, reducing coordination costs.
- **Preventive approach:** By focusing on strengthening climate-resilient health systems, enhancing surveillance, and improving environmental health, the project adopts a preventive approach. Investing in prevention and early warning systems is significantly more cost-effective than responding to full-blown health crises and environmental disasters caused by climate change.
- **Integrated One Health interventions:** The One Health approach inherently promotes cost-effectiveness by fostering synergies across human, animal, and environmental health sectors. For example, integrated surveillance for zoonotic and vector borne diseases reduces redundant efforts and optimizes resource allocation. Addressing environmental determinants of health (e.g., water quality) provides broader public health benefits beyond specific disease control.
- **Community-based solutions:** Implementing community-based water harvesting and psychosocial support programs are often more cost-effective and sustainable than large-scale, top-down interventions, as they leverage local knowledge and resources.
- **Capacity building for sustainability:** Investing in training and capacity building for local health professionals and communities ensures long-term sustainability of project outcomes, reducing reliance on external support in the future.
- **Avoided costs:** The project's interventions will lead to avoided costs associated with climate-related health emergencies, healthcare burdens, and economic losses from environmental degradation and food insecurity. For instance, preventing outbreaks of vector-borne diseases or mitigating saltwater intrusion will save significant resources that would otherwise be spent on treatment, emergency response, or rehabilitation.

  While a detailed cost-benefit analysis will be conducted during the full proposal development, the strategic allocation of funds across the four components is designed to maximize health and adaptation outcomes per dollar invested, focusing on high-impact, scalable, and sustainable interventions.

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 fully consistent with Libya's first NDC (2025) and its long-term adaptation vision, which aims to build a climate-resilient society capable of safeguarding lives, livelihoods, and ecosystems under intensifying climate hazards. The NDC identifies extreme heat, flash floods, salinization, aquifer depletion, and sand and dust storms as dominant risks, with disproportionate impacts across the five Climate-Related Risk Regions (C-RRR). This concept note operationalizes these national priorities by targeting high-exposure and low-capacity regions - particularly the coastal belt (R1), the transitional peri-urban zone (R2), and the drought-stressed interior and southern regions (R3–R4) - aligned with the NDC vulnerability profile.

The NDC identifies **public health and heat resilience** as one of six national priority systems for 2035, with outcome targets including: (i) 50% of health facilities meeting climate-resilient standards; (ii) heat-alert system coverage above 80%; and (iii) integrating health into national early-warning architectures. This project provides the concrete mechanisms to meet these national targets through climate-resilient WASH and energy upgrades, integrated climate-sensitive surveillance, multisectoral One Health preparedness, and strengthened workforce capacity for climate-related health risks.

The project is also aligned with Libya's institutional adaptation architecture. It directly complements the National Adaptation Intelligence and Coordination Platform (NAICP) and the Climate Risk Intelligence and Decision Support System (CIDSS), both identified as foundational enabling platforms for data, monitoring and reporting under the Enhanced Transparency Framework. By strengthening climate-sensitive health information systems, surveillance interoperability, and risk-informed decision-making, the project contributes to NDC milestones on operationalizing NAICP/CIDSS and improving adaptation monitoring through national dashboards and BTR's.

The NDC emphasizes equity and inclusion as core adaptation principles - prioritizing women, youth, internally displaced persons, migrants, and rural/oasis communities. This project operationalizes these principles by directing investments to high-risk populations; designing gender-responsive and disability-inclusive services; and establishing beneficiary-selection criteria that prioritize populations facing the highest climate-health burdens. This approach is fully consistent with the NDC's "just, inclusive and resilient development" objective and contributes directly to the NAP's focus on vulnerable households and fragile service systems.

Finally, the project aligns with the NDC's screening of adaptation measures for mitigation co-benefits. By expanding renewable-energy systems for health facilities and improving water- and energy-efficiency in WASH systems, the project delivers mitigation co-benefits consistent with the NDC's WEFE-nexus orientation. It also supports upcoming NAP implementation by addressing priority themes in health, surveillance, WASH, early warning, and climate-sensitive service resilience.

Together, these contributions demonstrate that the project advances Libya's NDC adaptation strategy, supports the institutional and data enablers identified in national planning documents, strengthens regional adaptation priorities, and contributes to measurable national outcomes to 2035.

The proposed project is also consistent with Libya's national development priorities and, where available, aligns with relevant national and sub-national strategies and plans. Despite the challenges posed by political instability, Libya has demonstrated a commitment to sustainable development and addressing climate change, as evidenced by:

- **National health strategies:** The project directly supports the strengthening of Libya's health system, which has been a consistent national priority, particularly in the context of achieving Universal Health Coverage (UHC) and enhancing preparedness for health emergencies. The project's focus on climate-resilient health systems and integrated disease surveillance and early warning systems aligns with efforts to revitalize and modernize the health sector.
- **One Health Memorandum of Understanding (MoU):** The recent signing of the One Health MoU among key ministries (Health, Agriculture, Environment, Local Governance, and Food and Drug Control Center) provides a strong policy framework for the project. This MoU signifies a national commitment to multisectoral collaboration for integrated health risk management, which is a core principle of this proposal.
- **National AMR Action Plan:** Libya's national AMR action plan, developed in 2019 and updated in 2025, is reinforced by the project's focus on combating antimicrobial resistance (AMR) through a One Health approach. In addition to strengthening infection prevention and control (IPC), the project addresses environmental dimensions of AMR - such as the contamination of water sources and soil with antibiotic residues and resistant pathogens from healthcare facilities, livestock production, and pharmaceutical waste. This integrated approach supports environmentally sound practices and policies to reduce AMR risks at the human-animal-environment interface.
- **Food Safety Roadmap:** Food safety is a critical aspect of Libya's National Food Security Strategy (2025–2035) officially approved in December 2024. This comprehensive plan represents the country's most significant step towards achieving food security, with food safety as a major pillar. This will promote climate-smart food safety and security.
- **International Commitments:** The project's objectives are consistent with Libya's broader international commitments under the UNFCCC and Paris Agreement to enhance adaptive capacity and build resilience to climate change. The project also contributes to Libya's efforts to achieve relevant Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health and Well-being), SDG 6 (Clean Water and Sanitation), SDG 2 (Zero Hunger), and SDG 13 (Climate Action).

  The project will actively engage with relevant national and sub-national authorities to ensure full alignment with evolving policies and to integrate project activities into broader development frameworks as they are strengthened.

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 project will ensure full compliance with relevant national technical standards in Libya and strictly adhere to the Environmental and Social Policy (ESP) of the Adaptation Fund. Given the current context in Libya, where some national standards may be in development or inconsistently applied due to ongoing instability, the project will adopt a pragmatic approach:

- **Adherence to available national standards:** Where national technical standards for

environmental assessment, building codes, water quality, food safety, and healthcare infrastructure are established and enforceable, the project will fully comply with them. This includes working closely with relevant ministries and agencies to identify and apply the most up-to-date national guidelines.

- **Application of international best practices:** In areas where national standards are nascent, absent, or inconsistently applied, the project will default to internationally recognized best practices and standards, particularly those promoted by WHO and other relevant international bodies. This will ensure the highest quality and safety standards for all project interventions.
- **Environmental and Social Impact Assessment (ESIA):** A comprehensive ESIA will be conducted during the full proposal development phase, as mandated by the Adaptation Fund's ESP. This assessment will identify potential environmental and social risks associated with project activities (e.g., construction of water harvesting systems, waste management from health facilities) and develop detailed mitigation and management plans. The ESIA process will be participatory, involving affected communities and stakeholders.

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

To avoid duplication and ensure complementarity, a thorough review of ongoing and planned climate change adaptation and health-related initiatives in Libya, funded by other sources, has been conducted. Based on available information, this project is designed to fill critical gaps and build upon existing efforts rather than duplicating them.

- While several organizations and donors are providing humanitarian assistance and some development support in Libya, particularly in the health sector, direct funding for comprehensive climate change adaptation specifically targeting health resilience through a One Health approach remains limited. Existing efforts tend to be fragmented or focused on immediate humanitarian needs rather than long-term adaptive capacity building.
- **Complementarity with WHO's existing support:** The WHO, as the Implementing Entity, is already providing country support on climate change and health (as evidenced by the who_cch_country_support_april-2025.pdf document). This project will directly leverage and scale up these existing efforts, integrating them into a more comprehensive and strategic framework. It will build on WHO's technical expertise and established relationships with national health authorities.
- **Building on One Health initiatives:** The project will complement the recently launched initiative on the implementation of the One Health approach in Libya, rather than creating new or parallel efforts. It will build on and benefit from the established coordination mechanisms, ensuring coherence, synergy, and efficient use of resources.

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

A robust learning and knowledge management component will be integral to this project, ensuring that lessons learned are systematically captured, documented, and disseminated to inform future adaptation efforts in Libya and beyond. This component will facilitate continuous improvement, promote best practices, and contribute to the global

knowledge base on climate change and health adaptation.

- **Regular Learning Reviews and Workshops:** Periodic learning reviews and workshops will be conducted with project staff, executing entities, government partners, and community representatives. These sessions will provide opportunities to reflect on progress, identify challenges, share experiences, and collectively derive lessons learned. Specific workshops will focus on cross-sectoral learning within the One Health framework.
- **Documentation of Best Practices and Case Studies:** Successful adaptation interventions and innovative approaches implemented through the project will be documented as best practices and case studies. These will highlight the effectiveness of the One Health approach in addressing climate-sensitive health risks in a complex setting like Libya.
- **Development of Policy Briefs and Technical Reports:** Key findings and policy recommendations emerging from the project will be synthesized into policy briefs and technical reports. These documents will target national policymakers, donors, and the broader climate change and health community, aiming to influence policy development and resource allocation.
- **Participation in National and International Forums:** Project representatives will actively participate in relevant national, regional, and international conferences, workshops, and forums (e.g., UNFCCC COPs, WHO regional meetings) to share project experiences, present findings, and engage in peer learning.

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 project preparation process has involved an initial consultative phase to ensure that the proposed interventions are relevant, responsive to local needs, and aligned with national priorities. This process has been guided by the principles of inclusivity, transparency, and participation, with particular attention to vulnerable groups and gender considerations, in compliance with the Adaptation Fund's Environmental and Social Policy and Gender Policy.

Initial Consultative Process:

To enhance collaboration and gather broad stakeholder input, a consultation workshop titled "Protecting Public Health from Climate Change and Pollution: The Role of the One Health Approach" was jointly organized by the World Health Organization (WHO), United Nations Development Programme (UNDP), Ministry of Health, and Ministry of Environment in August 2025. The workshop served as a platform for identifying and discussing key priorities, challenges, and actionable solutions to address the multifaceted impacts of climate change on public health. Adopting an integrated One Health approach, the event underscored the interconnectedness of human, animal, and environmental health as the cornerstone for developing sustainable and comprehensive responses to the growing threats posed by climate change and pollution.

The workshop brought together a diverse array of stakeholders to ensure that discussions captured the perspectives and expertise of all relevant sectors. Participants included representatives from the Ministry of Environment, Ministry of Health, UNDP, WHO, Ministry of Agriculture, the National Center for Disease Control (NCDC), the National

Center for Animal Health (NCAH), academic and research institutions such as the University of Tripoli and the Agricultural Research Center, local governments, as well as healthcare providers. Significant made efforts to ensure the active participation of both women and men, reflecting a commitment to consider inclusivity. This approach was pivotal in identifying solutions that meet the needs of all sectors of society.

Stakeholder feedback and incorporation into project design: Consultation inputs highlighted four priority needs: (i) strengthening climate-sensitive disease surveillance and early warning, especially for floods, SDS and zoonoses; (ii) upgrading WASH and electricity systems in health facilities exposed to recurrent climate shocks; (iii) operationalizing the One Health MoU through clearer coordination roles; and (iv) improving climate and health data availability for risk-informed planning. These recommendations directly informed the project structure: Component 3 elevates integrated climate-informed surveillance and EWS; Component 2 prioritizes climate-resilient WASH and solarization; Component 1 embeds multisectoral coordination and NHAP development; and Component 4 includes targeted workforce readiness measures. Outstanding issues such as municipal-level gaps, community participation mechanisms, and the prioritization of specific facilities will be addressed during full proposal preparation.

The workshop reflected the importance of collective action to address the dual challenges of climate change and its substantial impact on public health. Guided by the principles of partnership and participatory dialogue, presentations focused on key topics, including Libya's ongoing climate change initiatives, the urgent call to respond to the catastrophic Derna crisis, the implications of climate change on health through a One Health perspective, and current efforts to counter these emerging challenges.

A core component of the workshop was the presentation of findings from the Climate Change and Health Vulnerability Assessment Questionnaire. This pre-workshop assessment gathered valuable input from diverse stakeholders. The survey played a vital role in identifying the most pressing climate-related vulnerabilities, the risks they posed to public health and related systems, and the systemic barriers to achieving sustainable resilience.

During this consultation workshop, through dynamic working group sessions, participants addressed specific focal areas linked to the impacts of climate change on public health, including infrastructure and health facility resilience, governance and coordination, and surveillance and early warning systems. These discussions were collaborative and action-driven, allowing participants to thoroughly examine challenges and determine actionable priorities to chart a way forward.

during which participants embraced the necessity of the One Health approach as an essential framework for addressing the intersection of climate change, public health, and environmental degradation. The event concluded with a consolidated summary of stakeholder contributions, which will serve as a foundation for refining and shaping the design of this proposed project's interventions.

These discussions and engagements reinforced the importance of leveraging existing relationships and collaborations to develop inclusive and impactful solutions, and incorporating the insights of critical local, national, and international stakeholders and ensuring balanced gender representation throughout the process.

During the concept note development, consultations have been initiated with key national stakeholders, building on existing relationships and recent collaborative efforts. These have included:

- **Ministry of Health (MoH):** Discussions with officials from the MoH, particularly those involved in public health, disease surveillance, and emergency response, to understand national health priorities and existing capacities.
- **National Center for Disease Control (NCDC):** Engagement with NCDC leadership and technical staff, given their central role in disease surveillance, outbreak response, and the implementation of the One Health approach.
- **National Center for Animal Health (NCAH):** Consultations with NCAH representatives to integrate animal health perspectives, particularly concerning zoonotic diseases and livestock management, food safety in the context of climate change.
- **Ministry of Environment:** Discussions with environmental authorities playing a key role in the climate change agenda to understand climate change impacts, environmental pollution challenges, and national environmental policies.
- **Ministry of Local Governance Representatives:** Initial outreach to representatives from the Environmental Sanitation affairs directorates overarching the supervision of health-related interventions at municipalities to understand local climate and health vulnerabilities and priorities.
- **CSOs:** Targeted engagement was conducted with CSOs working on gender equality, disability inclusion, youth and women empowerment, and climate advocacy. These consultations helped identify priority needs of vulnerable groups especially women, children, and migrants. The engagement shaped the design of inclusive, community-responsive interventions. CSOs also provided valuable input on barriers to access, local adaptation knowledge, and potential entry points for behavior change and community mobilization.

  Community-level and vulnerable-group perspectives: Although national technical stakeholders formed the core of initial consultations, additional inputs were gathered indirectly through CSOs representing women, youth, persons with disabilities, migrants, and IDPs. These groups highlighted barriers such as inaccessible health facilities during heatwaves and floods, weak climate-related risk communication targeted at marginalized populations, heightened GBV risks during climate-induced displacement, and limited service coverage in informal settlements and remote areas. These insights informed the project's emphasis on gender- and disability-responsive WASH design, targeted geographic prioritization of high-exposure communities, and the inclusion of community-facing risk communication and MHPSS elements. During full proposal development, structured municipal-level consultations - including separate sessions for women, youth, PWD, migrants and IDPs - will be conducted to refine activity design and beneficiary-selection criteria.

  Outstanding gaps and next steps for the full proposal: While the initial consultations established strong national ownership, stakeholders highlighted the need for (i) deeper subnational engagement with municipal health authorities; (ii) direct dialogue with facility managers in high-risk locations; and (iii) community-level validation of the proposed adaptation measures. These processes - together with expanded engagement of women's cooperatives, youth groups, pastoralist associations, PWD organisations, and migrant/IDP networks - will be undertaken during full proposal formulation to ensure that the final design reflects local priorities and operational realities, and that benefit-distribution mechanisms are transparent and equitable.

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

The requested funding of US$ 5 million is justified based on the full cost of adaptation

reasoning, which recognizes that the proposed interventions address additional costs incurred due to the adverse impacts of climate change. These costs go beyond baseline assessment and development needs and are specifically required to build resilience and adapt to the changing climate in Libya.

Libya's existing health and environmental challenges are significantly exacerbated by climate change. Without this intervention, the country's capacity to cope with climate-sensitive health risks would remain severely limited, leading to escalating humanitarian crises, increased morbidity and mortality, and significant economic losses. The requested funds are not for addressing pre-existing development deficits per se, but rather for enabling Libya to adapt to the new and additional threats posed by climate change.

Existing finance flows to Libya are largely oriented toward humanitarian response, basic service restoration and short-term health system support. While some development partners fund emergency preparedness, disease control and health infrastructure repair, there are currently no substantive programmes that systematically address climate-sensitive health risks through an integrated One Health, surveillance, infrastructure and workforce resilience package at national scale. Domestic fiscal space is constrained and highly sensitive to hydrocarbon revenue volatility, limiting the ability of the Government to absorb the additional costs of climate-proofing health facilities, deploying climate-informed surveillance, and establishing robust early warning systems. The Adaptation Fund therefore fills a critical gap by financing climate-specific, forward-looking interventions that go beyond the scope and time horizons of existing humanitarian and development financing.

Key elements of the full cost of adaptation reasoning include:

- **Addressing climate-induced health burdens:** The project focuses on diseases and health impacts (e.g., heat stress, vector-borne diseases, waterborne diseases, mental health issues) whose prevalence and severity are directly influenced by climate change. The interventions (e.g., enhanced surveillance, climate-resilient infrastructure, targeted training) are specifically designed to reduce these climate-attributable health burdens.
- **Building adaptive capacity:** The project invests in strengthening institutional and community adaptive capacity, which is a direct response to climate change. This includes developing national adaptation plans, establishing early warning systems, and building the skills of the health workforce to manage climate risks. These capacities would not be developed to the same extent or with the same urgency in the absence of climate change.
- **Climate-resilient infrastructure:** The development of guidelines for climate-resilient health infrastructure and the implementation of community-based water harvesting systems are examples of climate-proofing infrastructure. These are additional costs incurred to ensure that essential services can withstand future climate impacts.
- **Addressing non-economic losses:** The project recognizes and addresses non-economic losses associated with climate change, such as mental health impacts and loss of cultural heritage. These are often overlooked in traditional development projects but are a critical component of adaptation.

At component level, the full cost of adaptation can be summarized as follows: under the baseline, health policies and plans do not systematically integrate climate risk analysis or One Health considerations, and no National Health Adaptation Plan exists - Component 1 therefore finances the additional analytical, coordination and policy-integration work required to mainstream climate change into the health sector. Baseline health facilities operate with fragile electricity and WASH systems that are not designed for extreme heat, floods or SDS; Component 2 covers the incremental costs of climate-resilient design, solarization and WASH upgrades needed to maintain functionality under future climate

conditions. Existing surveillance systems are fragmented, disease-centered and only partially sensitive to climate signals; Component 3 finances the development of integrated, climate-informed surveillance and early warning capacities that would not be established without dedicated adaptation funding. Finally, under current conditions, workforce development focuses on conventional public health functions; Component 4 supports additional training, tools and institutional arrangements required for health and related sector professionals to anticipate, manage and recover from climate-related health shocks. Collectively, these represent the climate-induced additional costs over and above a business-as-usual health system investment trajectory.

In the absence of this project, Libya would continue to face a growing adaptation deficit, with increasing costs from climate-related health emergencies, environmental degradation, and economic disruptions. The requested funding will enable Libya to proactively manage these risks, build long-term resilience, and protect the well-being of its population in a changing climate. The US$ 5 million budget is a carefully considered estimate to achieve the project's ambitious yet achievable objectives, leveraging existing structures and promoting cost-effective, sustainable solutions.

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

The sustainability of project outcomes has been a central consideration in the design of this programme. The project aims to create lasting positive change by embedding climate resilience within national systems, strengthening local capacities, and fostering a culture of adaptation. Key strategies to ensure sustainability include:

- **Institutional strengthening and policy integration:** By integrating the National Health Adaptation Plan into existing national health strategies and strengthening the One Health collaboration framework, the project ensures that climate change adaptation becomes an institutionalized priority, rather than a standalone, project-dependent activity. This will ensure continued government ownership and support beyond the project's lifespan.
- **Capacity building:** The project places a strong emphasis on building the capacity of national and local stakeholders, including health professionals, government officials, and community leaders. This investment in human capital will create a pool of skilled individuals who can continue to lead and implement adaptation efforts long after the project concludes.
- **Community ownership and empowerment:** The implementation of community-based interventions, such as water harvesting systems and psychosocial support programs, will be driven by community participation and ownership. This will ensure that these initiatives are tailored to local needs and are more likely to be maintained and sustained by the communities themselves.
- **Knowledge Management and Dissemination:** The knowledge management component will ensure that lessons learned, and best practices are systematically documented and shared, creating a valuable resource for future adaptation planning and implementation in Libya.
- **Strengthening surveillance and early warning systems:** The establishment of robust and integrated surveillance and early warning systems will provide a lasting legacy, enabling Libya to continue monitoring and responding to climate-sensitive health risks effectively.
- **Partnership and Collaboration:** The project will foster strong partnerships among government agencies, civil society, and communities. These collaborative relationships will provide a foundation for continued joint action on climate and health issues.

By focusing on these key sustainability elements, the project aims to create a virtuous cycle of adaptation, where strengthened capacities, improved knowledge, and institutionalized processes lead to ongoing and self-sustaining efforts to build climate resilience in Libya.

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

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	Targeted legal and regulatory review is required at the FP stage	**Risk:** Required national permits or technical approvals may be delayed or missing. **Project approach:** All physical works follow national codes and WHO/UNDP technical standards. **Mitigation:** • Prepare legal compliance matrix at FP stage. • Obtain all permits before works ("no-works-without-permits"). • Include compliance clauses in contractor contracts. **Risk:** Electronic surveillance and early warning platforms may process sensitive health data contrary to national confidentiality rules. **Project approach:** Systems designed under WHO/NCDC standards. **Mitigation:** • Data-protection review at FP stage. • SOPs for data access, storage and sharing. • Staff training on confidentiality and data security.
Access and Equity	Targeted access-barrier assessment at FP stage	**Risk:** Uneven access to project benefits for remote communities, women, migrants, PWD. **Project approach:** Service upgrades and training designed for inclusive coverage. **Mitigation:** • Map underserved groups during FP stage. • Prioritise high-risk, low-access municipalities. • Ensure free, equitable access to all training and facility services.
Marginalized and Vulnerable Groups	Inclusion analysis as part of the ESMP at FP stage	**Risk:** Vulnerable groups (women, youth, IDPs, migrants, PWD) may be unintentionally excluded. **Project approach:** Formal inclusion commitments; engagement through CSOs. **Mitigation:** • Inclusive consultation plan. • Disaggregated monitoring requirements. • Targeted outreach through local NGOs and

		community networks.
Human Rights	No additional analysis is required. Compliance monitoring is required	**Risk:** Discrimination or unequal access in service delivery. **Project approach:** Alignment with WHO/UNDP human-rights standards. **Mitigation:** • Human-rights clauses in all partner agreements. • Grievance mechanism accessible in multiple formats.
Gender Equality and Women's Empowerment	Gender analysis required at FP stage	**Risk:** Gender-blind design in surveillance, training, and service delivery. **Project approach:** Gender-responsive programming aligned with AF Gender Policy. **Mitigation:** • Gender analysis informing FP design. • Mandatory sex-disaggregated indicators. • Women's representation in consultations and CBS/EBS teams.
Core Labour Rights	No	**Risk:** Non-compliance by contractors with labour standards or OHS rules. **Project approach:** All contractors subject to UNDP/WHO labour conditions. **Mitigation:** • Mandatory OHS plans. • No child labour / forced labour clauses. • Regular contractor monitoring.
Indigenous Peoples	No Libya has no legally recognised Indigenous Peoples under AF definition	**Risk:** None anticipated. **Project approach:** Ensure culturally appropriate engagement of minority groups. **Mitigation:** • Continued monitoring to identify any emerging concerns.
Involuntary Resettlement	No Project does not involve land acquisition or physical works requiring displacement	**Risk:** Minor, temporary access restrictions during solar/WASH works. **Project approach:** Small-scale facility upgrades within existing footprints. **Mitigation:** • No-displacement rule. • Contractor method statements to avoid service disruption.
Protection of Natural Habitats	No Interventions occur within existing health facilities.	**Risk:** Improper disposal of construction waste could affect local ecosystems. **Project approach:** Environmentally safe O&M and construction practices. **Mitigation:** • Waste-management plan for contractors. • No activity outside existing disturbed areas.
Conservation of Biological Diversity	No Project activities have no interface with	**Risk:** None significant; no disturbance of natural habitats. **Mitigation:** • Compliance with national environmental

	biodiversity-sensitive sites	regulations.
Climate Change	No Project is adaptation-focused	**Risk:** Minor emissions from construction and logistics. **Project approach:** Focus on adaptation, solarisation, efficiency. **Mitigation:** • Use of renewable energy systems. • Efficient construction practices.
Pollution Prevention and Resource Efficiency	Yes Waste management and resource-use plan required at FP stage	**Risk:** Wastewater, medical waste, and construction waste could be mishandled. **Project approach:** Upgrades follow WHO WASH, IPC and healthcare waste standards. **Mitigation:** • Facility-level waste protocols. • Contractor waste-handling requirements.
Public Health	No Project is fundamentally a public-health strengthening intervention	**Risk:** Temporary service disruption during WASH/solar upgrades. **Project approach:** Phased implementation avoiding downtime. **Mitigation:** • Contractor scheduling around service hours. • Continuity-of-care safeguards at each site.
Physical and Cultural Heritage	No All works occur within existing modern facilities	**Risk:** None expected; extremely low likelihood of encountering heritage artifacts. **Mitigation:** • Chance-find procedure integrated in ESMP.
Lands and Soil Conservation	No Works involve no land conversion	**Risk:** Minor soil disturbance from small-scale installations. **Project approach:** Installations strictly within existing facility grounds. **Mitigation:** • Restore disturbed areas post-installation. • Ban on activities causing erosion or runoff.

PART III: IMPLEMENTATION ARRANGEMENTS

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

The project is fully aligned with the Results Framework of the Adaptation Fund, contributing to the Fund's overall goal of reducing vulnerability and increasing the resilience of human and natural systems to the impacts of climate change. The project's objectives and outcomes are directly linked to the Fund's outcomes and indicators, as outlined in the table below.

Each component is mapped to specific AF Outcomes (1, 2, 3, 4, 6 and 7), with corresponding Fund indicators. Component 1 contributes primarily to Outcome 7 (improved policies and regulations). Component 2 maps to Outcome 4 (increased adaptive capacity in health infrastructure). Component 3 aligns with Outcomes 3 and 6 (climate-risk monitoring and early-warning). Component 4 contributes to Outcomes 2 and 1 by strengthening the adaptive capacity of institutions and vulnerable populations. The alignment table below reflects this precise mapping.

Project Objectives	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Enhance health system climate resilience through policy integration and Multisectoral collaboration	**%** reduction in climate-related service disruption days in targeted health facilities. **N** of national and sub-national health institutions using climate-risk information and adaptation tools for planning and budgeting. **%** of priority climate-sensitive disease alerts detected and responded to within defined response time thresholds. **N** of people benefiting from strengthened climate-resilient health services in high-risk areas *(disaggregated by sex, age, disability).*	**Outcome 1:** Reduced exposure to climate-related hazards and threats	**Indicator 1:** People using improved climate-related threat and hazard information; *[# of individuals, disaggregated by gender]* **Indicator 1.2.2:** People covered by new or improved early warning systems; *[# of people, disaggregated by gender]*	**5,000,000**
		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 and sector]* **Indicator 2.1.1:** Institutions supported to strengthen capacity to understand and address climate risks and resilience *[# of institutions, disaggregated by scale and sector]*	
		Outcome 4: Increased adaptive capacity within	**Core Indicator 4:** Physical assets improved or constructed to withstand	

Project Objectives	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
		relevant development sector services and infrastructure assets	climate variability and change *[# of point infrastructure assets, disaggregated by sector]* **Indicator 4.1.1:** Development sector services strengthened to respond to climate variability and change; *[# of sector services, disaggregated by sector and scale]* **Indicator 7:** Policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations; *[# of policies, strategies, and/or plans, disaggregated by scale and policy step]*	
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures	**Core Indicator 7.1.1:** Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations; *[# of policies, strategies, and/or plans, disaggregated by scale]* **Indicator 7.1.2:** Policies, strategies, and/or plans formulated through the participation of one or more vulnerable groups; *[# of policies, strategies, and/or plans, disaggregated by scale]*	
Project Outcome	**Project Outcome Indicators**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1.1 - Evidence-based climate and health risk information is regularly generated, disseminated and used for decision making	**N** of national and sub-national climate–health risk assessments completed and formally endorsed by government institutions **N** of ministries and sub-national authorities using climate–health risk information to inform planning, budgeting or policy decisions **N** of decision-makers with access to regularly updated climate–health evidence products (disaggregated by national/subnational level)	**Output 1.1**: Risk and vulnerability assessments conducted and updated	**Indicator 1.1.1**: Risk and vulnerability assessments conducted or updated; *[# of assessments, by sector and scale]*	**530,000**
		Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	
Outcome 2.1 -	**N** of national and sub-	**Output 2.1**:	**Indicator 2.1.1**: Institutions	

Project Objectives	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Climate change is systematically integrated into national and sub-national health sector policies, planning frameworks and regulations	national health policies, strategies or plans developed or revised to integrate climate risk and resilience considerations National Health Adaptation Plan formally adopted and operationalized **N** of national institutions with mandates, SOPs or planning frameworks updated to address climate-sensitive health risks Public Health Emergency Management framework revised to integrate One Health and climate-related threats (yes/no, with scope)	Strengthened capacity of institutions to understand and better address climate risks	supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	**600,000**
		AF Output 7.1: Improved integration of climate-resilience strategies into country development plans	**Core Indicator 7.1.1**: Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations; *[# of policies, strategies, and/or plans, disaggregated by scale]* **Indicator 7.1.2**: Policies, strategies, and/or plans formulated through the participation of one or more vulnerable groups; *[# of policies, strategies, and/or plans, disaggregated by scale]*	
Outcome 2.2 - A functional One Health coordination mechanism strengthens multi-sectoral collaboration on climate sensitive health risks	One Health national coordination platform formally established and operational (yes/no) **N** of multisectoral institutions (human health, animal health, environment, agriculture, local government) actively participating in One Health coordination on climate-sensitive health risks **N** of joint multisectoral risk assessments, preparedness actions or coordinated responses initiated through the One Health mechanism Frequency of regular One Health Task Force meetings convened per year with documented decisions and follow-up actions	**Output 2.1**: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	**240,000**
		Output 3.3: Increased ownership of adaptation and climate risk reduction processes	**Indicator 3.3.1**: Number of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented; *[# of local institutions and/or communities]*	
Outcome 3.1 - Healthcare facilities deliver uninterrupted, climate resilient and environmentally sustainable essential services	**N** of healthcare facilities in high-risk areas delivering uninterrupted essential services during climate shocks (heatwaves, floods, power outages) **N** of health facilities meeting climate-resilient service standards (energy, WASH, IPC, cold chain) **%** reduction in climate-related service disruption days in supported facilities	**Output 4.1**: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	**Indicator 4.1.1**: Development sector services strengthened to respond to climate variability and change; *[# of sector services, disaggregated by sector and scale]* **Core Indicator 4**: Physical assets improved or constructed to withstand climate variability and change; *[# of point infrastructure,*	**1,350,000**

Project Objectives	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
	N of health facilities powered by climate-resilient energy systems and equipped with climate-resilient WASH infrastructure		*disaggregated by sector]*	
Outcome 4.1 - Climate-sensitive disease surveillance, early warning and response systems detect and respond to climate-related health risks in a timely manner	**N** of climate-sensitive diseases covered by climate-informed surveillance and early warning systems **N** of surveillance systems integrating climate-relevant indicators across human, animal and environmental health sectors Average time between detection and notification of climate-sensitive health events reduced in supported regions **N** of people covered by improved climate-sensitive early warning systems *(disaggregated by gender)*	**Output 1.2**: Targeted population groups covered by warning and advisory services for climate-related hazards and threats	**Core Indicator 1.2.1**: Early warning systems established or improved; *[# of systems, disaggregated by hazard and scale]* **Indicator 1.2.2**: People covered by new or improved early warning systems; *[# of people, disaggregated by gender]*	**848,295**
		Output 2.1: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	
Outcome 4.2 - Surveillance and EWS are institutionalized and sustainably operated at national and sub-national levels	Climate-sensitive disease surveillance and early warning systems formally integrated into national and sub-national institutional mandates and operating procedures **N** of national and sub-national institutions with dedicated budget lines or recurrent financing mechanisms for surveillance and EWS operations **%** of supported surveillance and EWS functions remaining fully operational 12 months after project completion **N** of health facilities and districts with climate-resilient vaccine delivery and cold-chain systems maintained during climate-related disruptions	**Output 2.1**: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	**220,000**
		Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	**Indicator 4.1.1**: Development sector services strengthened to respond to climate variability and change; *[# of sector services, disaggregated by sector and scale]* **Core Indicator 4**: Physical assets improved or constructed to withstand climate variability and change; *[# of point infrastructure, disaggregated by sector]*	
Outcome 5.1 - A Multisectoral and multidisciplinary workforce is equipped with the skills and	**N** of multisectoral personnel (health, animal health, environment, municipal services) trained in climate-sensitive health risk prevention, detection, and response	**Output 2.1**: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	**750,000**

Project Objectives	Project Objective Indicators	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
competences to prevent, detect and respond to climate-related health risks	*(disaggregated by gender, sector, and level)* **%** of trained personnel demonstrating improved competencies in climate-sensitive surveillance, IPC, outbreak response, and One Health coordination **N** of operational rapid response teams meeting national standards for climate-sensitive health emergencies **%** of supported PHC facilities with trained staff capable of detecting and reporting climate-sensitive diseases during climate shocks	**Output 3.1**: Targeted population groups participating in adaptation and risk reduction awareness activities	**Indicator 3.1.1**: People participating in activities to improve awareness of climate risks and how to address them; *[# of people, disaggregated by gender and by vulnerable groups]*	
		Output 3.3: Increased ownership of adaptation and climate risk reduction processes	**Indicator 3.3.1**: Number of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented; *[# of institutions or communities]*	
Outcome 5.2 - Sustained institutional capacity is established at national and subnational levels to deliver climate–health training, preparedness and operational readiness programmes	**N** of national and subnational institutions with climate–health training curricula formally institutionalized **N** of climate–health training programmes delivered through government-owned systems beyond the project lifecycle **N** of trainers and mentors certified to deliver climate–health preparedness and operational readiness programmes *(disaggregated by gender and institution)* **N** of subnational entities applying standardized climate–health preparedness and readiness protocols in routine operations	**Output 2.1**: Strengthened capacity of institutions to understand and better address climate risks	**Indicator 2.1.1**: Institutions supported to strengthen capacity to understand and address climate risks and resilience; *[# of institutions, disaggregated by scale and sector]*	**240,000**
		Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	**Indicator 3.2.1**: Climate resilience knowledge products and/or tools developed and shared with stakeholders; *[# of products/tools]*	
		Output 3.3: Increased ownership of adaptation and climate risk reduction processes	**Indicator 3.3.1**: Number of local institutions and/or communities responsible for decision-making over how adaptation solutions are defined, prioritized, designed, and/or implemented; *[# of local institutions and/or communities]*	

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

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

A. **Record of endorsement on behalf of the government[2]** *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:*

(Enter Name, Position, Ministry) Eng. Ahmed Abdulqader Alsoudani, Senior Officer, Ministry of Environment, Libya, Tel: + 218 9133 98 900, ahalarabi@environment.gov.ly	Date*: (Month, day, year)* February 9, 2026

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plan and Nationally Determined Contributions on Climate Change Adaptation 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.

Dr. Ahmed Zouiten, WHO Country Representative, Libya Implementing Entity Coordinator: VILLALOBOS Prats, Elena WHO Headquarters villalobose@who.int

Date: *(Month, Day, Year)* February 9, 2026	Tel. and email: +218 91003080 zouitena@who.int
Project Contact Person: Cosima Zingariello	
Tel. And Email: +216 99458603 zingarielloc@who.int	

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

دولة ليبيا
State of Libya
حكومة الوحدة الوطنية
Government of National Unity

وزارة البيئة
Ministry of Environment

الرقم الإشاري : 1658
رقم الملف : ----------

التاريخ : / / 14هـ
الموافق : 8 / 2 / 2026 م

ADAPTATION FUND

Letter of Endorsement by Government

08/02/2026

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

Subject: Endorsement for Strengthening Climate Change Adaptation and Health System Preparedness, Readiness and Resilience to Multi Hazard Risks and Climate Impacts.

In my capacity as designated authority for the Adaptation Fund in Libya, I confirm that the above national project concept note is in accordance with the Government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Libya.

Accordingly, I am pleased to endorse the above project concept note with support from the Adaptation Fund. If approved, the project will be implemented by the World Health Organization (WHO) as the Multilateral Implementing Entity and executed by the United Nations Development Programme (UNDP), Ministry of Health, Ministry of Environment, Ministry of Agriculture, National Center for Disease Control, National Center for Animal Health, Ministry of Local Government, and Environmental Sanitation Affairs.

Sincerely,

Eng. Ahmed Abdulqader Alsoudani
Director of Geographic Information Systems Department
Ministry of Environment Libya
Tel: + 218 91 339 8900
Email: ahalarabi@environment.gov.ly

ADAPTATION FUND

Revised PFG Submission Form[1] (additions in red)

Project Formulation Grant (PFG)

Submission Date: 9 February 2026

Adaptation Fund Project ID:
Country/ies: Libya
Title of Project/Programme: Strengthen climate change adaptation and Health system preparedness, readiness and resilience to multi-hazard risks and climate impacts
Type of IE (NIE/RIE/MIE):
Implementing Entity: WHO Libya
Executing Entity/ies: UNDP Libya

A. Project Preparation Timeframe

Start date of PFG	Upon approval of the Concept Note
Completion date of PFG	6 months after Concept Note Approval

B. Proposed Project Preparation Activities ($)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US$ Amount	Budget note[2]
Assessments	1. Knowledge attitude and Practice (KAP) studies will be conducted to provide baseline data, inform decision-making, tailor interventions, prioritize resource allocation, monitor and evaluate impact, and engage the community effectively. 2. Other baseline assessments will generate information	70,000	

[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.

	that will inform refining of activities and setting targets		
Gender Analysis	Gender analysis will assess the following 1. Governance and Management: - Inclusion of women in governance structures at community level 2. Access to Resources and Services: - Addressing gender-specific barriers to healthcare access. - Addressing gender-specific barriers to resources including economic opportunities - Ensuring water and sanitation needs are met for women. 3. Impact of Climate Change on Health: - Conducting gender specific challenges. 4. Monitoring and Evaluation: - Ensuring gender-sensitive data collection and analysis. - Mainstreaming gender consideration in routine monitoring processes of relevant sectors.	20,000	
Workshops	- Stakeholders' consultation workshop for all line ministries - Stakeholders' consultation workshop targeting municipal authorities - Stakeholder Consultations workshop targeting Community Members	10,000*3=30,000	

	- Stakeholder Consultations workshop targeting women		
Travel and participation	All costs related to travel and technical support incurred by the Implementing Entity (IE)	13,000	
Design of the full project proposal	A comprehensive document, including the technical outcomes of assessment studies, will be developed and validated before submission to the Adaptation Fund (AF).	12,000	
Other Costs	Management Fee	5,000	
Total Project Formulation Grant		150,000	

Please describe below each of the PFG activities and provide justifications for their need and for the amount of funding required:

Justification

1. Assessments (US$ 70,000)

Description:

- **Knowledge, Attitude, and Practice (KAP) Studies:** These studies aim to gather baseline data on community perceptions, practices, and knowledge related to the project's thematic areas. This will ensure that project activities are evidence-based and tailored to address real, contextual needs. For example, understanding gaps in awareness or misconceptions can inform targeted educational campaigns.
- **Other Baseline Assessments:** These assessments will generate specific data in the targeted regions to assess the status of implementation against all programme strategies, and selected indicators to guide refinement of activities and setting of targets. Such assessments are critical to provide an objective reference for measuring progress and project impact over time. This data will also guide the prioritization of interventions to optimize resource allocation and increase efficiency. By anchoring project activities in robust data, these assessments enhance project accountability and contribute to achieving measurable, sustainable outcomes.

2. **Gender Analysis (US$ 20,000)**

Description: This activity focuses on evaluating gender dynamics and inequalities across governance, resource access, and climate resilience. The review will focus on the following aspects;

- **Governance and Management:** Will assess the extent to which women participation is ensured in decision-making and policy formulation and leadership roles.
- **Access to Resources and Services:** Addressing gender-specific barriers to healthcare access and ensuring water and sanitation needs are met for women.
- **Impact of Climate Change on Health:** Gender-sensitive vulnerability is considered in various climate change related assessments. This will inform the development of equitable adaptation strategies.

- **Monitoring and Evaluation:** Ensuring gender-disaggregated data collection and the use of gender-specific indicators for progress tracking.

Justification:

- Gender analysis is essential to address structural inequalities that disproportionately affect women and other marginalized groups, ensuring that interventions do not inadvertently perpetuate discrimination.
- Evaluate gender-specific barriers and inequalities in accessing essential services, such as healthcare, education, water, and sanitation, while identifying opportunities for promoting equitable access for all.
- Incorporating gender-sensitive approaches strengthens the project's alignment with global commitments, such as the Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality).

3. **Workshops (US$ 30,000)**

Description: Stakeholder Consultation Workshops:

- Workshops for line ministries to ensure intersectoral collaboration and alignment with national priorities.
- Workshops with regional councils, Governors' offices, and local authorities to localize project interventions and gather on-the-ground insights.
- Community-level consultations to ensure that the voices and concerns of local populations are integrated into project planning.

Justification:

- Stakeholder engagement promotes ownership, accountability, and sustainability of project outcomes. Engaging line ministries ensures that the project aligns with existing policies and avoids duplication of efforts.
- Regional and local consultations provide an opportunity to address specific challenges unique to different contexts, promoting tailored interventions.
- Community consultations help incorporate indigenous knowledge and practices, building trust and ensuring cultural relevance, which increases the likelihood of success and community buy-in.

4. **Travel and Participation (US$ 13,000)**

Description: This budget covers travel expenses for the Implementing Entity (IE) staff to provide technical support, participate in stakeholder engagements, and oversee field activities.

Justification:

- Field visits are crucial to ground-truth data collected during assessments and ensure that proposed interventions are contextually appropriate.
- Travel for technical support ensures high-quality outputs, adherence to Adaptation Fund guidelines, and the effective facilitation of PFG activities.
- Direct engagement with stakeholders at various levels fosters collaboration and builds trust, which is vital for long-term project success.

5. **Design of the Full Project Proposal (US$ 10,000)**

Description: A comprehensive project proposal will be developed, incorporating technical outcomes from assessments, stakeholder inputs, and validated recommendations.

Justification:

- A well-designed project proposal is essential to secure funding and effectively communicate the project's vision, objectives, and implementation strategy.

- By integrating assessment findings and stakeholder feedback, the proposal ensures alignment with community needs, national priorities, and donor requirements.
- Validation by stakeholders enhances credibility and commitment, ensuring that the proposal reflects a collective vision and has buy-in from all relevant parties.

6. **Other Costs: Management Fee (US$ 8,000)**

Description: This fee covers operational and administrative costs, including project coordination, reporting, and compliance with financial and administrative requirements.

Justification:

- Proper management and coordination are critical for the seamless execution of PFG activities.
- These costs ensure timely reporting, effective resource utilization, and compliance with donor requirements.
- By covering these essential operational needs, the project team can focus on delivering high quality outcomes without administrative disruptions

C. Implementing Entity

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

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
WHO Libya Country Representative, Dr. Ahmed Zouiten		09/02/2026	Cosima Zingariello	+ 216 99458603	zingarielloc@who.int

References

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