



## ADAPTATION FUND

AFB/PPRC.38/Inf86  
20-21 October 2026

---

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

### **PROPOSAL FOR LARGE INNOVATION PROJECT FOR EGYPT, ARAB REPUBLIC OF, JORDAN, AND LEBANON**



ADAPTATION FUND

**ADAPTATION FUND BOARD SECRETARIAT**  
**TECHNICAL REVIEW OF PROJECT PROPOSAL FOR**  
**"CAPTURING EVERY DROP. FOSTERING INNOVATION TO INCREASE THE RESILIENCE OF**  
**URBAN WATER SYSTEMS IN THE ARAB REGION"**

|                     |                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| Project Title       | Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region |
| Project ID          | AF00000593                                                                                                      |
| Category            | Innovation large project                                                                                        |
| Type                | Regional project                                                                                                |
| Stage               | Concept                                                                                                         |
| Country             | Regional (Egypt, Arab Republic of, Jordan, Lebanon)                                                             |
| Implementing Entity | UNHAB                                                                                                           |
| Financing Requested | USD 5,000,000.00                                                                                                |

Reviewer

Co-reviewer(s)

IE Contact Person

Cerin Kizhakkethottam, Yasmine Mostafa

### Secretariat's Overall Comment

A project formulation grant of USD 164,920 is requested.

The initial technical review finds that the programme presents a relevant regional adaptation rationale and a potentially credible innovation proposition but needs to more clearly define the innovations, their maturity, evidence base, testing uncertainties and pathways to replication and scale under the AFCIA partnership. It should also strengthen the theory of change and regional added value; clarify benefits, participation and gender outcomes for vulnerable groups; substantiate cost-effectiveness and adaptation additionality; and strengthen arrangements for consultations, learning from both successful and unsuccessful approaches, technical compliance, sustainability and post-project financing. The results framework should better position Innovation Outcome 8, while the environmental and social assessment should address categorization, unidentified subprojects and the appropriate safeguards instruments. The PFG request is within the applicable ceiling, but its internal inconsistencies, activity boundaries and innovation-related scope should be corrected, as raised in the Clarification Requests (CRs) and Corrective Action Requests (CARs) in the review.

### Country Eligibility

**Is the participating country / are all participating countries developing countries particularly vulnerable to the adverse effects of climate change?**

**Response:** Yes

**Secretariat:** All three participating countries are developing countries particularly vulnerable to the adverse effects of climate change. The concept identifies increasing temperatures, drought, rainfall variability and worsening water scarcity as key climate risks affecting already stressed urban water systems in Egypt, Jordan and Lebanon.

**Is/are the beneficiary country/countries a developing country/countries Party/Parties to the Kyoto Protocol?**

**Response:** Yes

**Secretariat:** Egypt, Jordan and Lebanon are developing country Parties to both the Kyoto Protocol and the Paris Agreement

**Project Eligibility**

**Has the designated government authority for the Adaptation Fund / Have the governments' designated authorities for the Adaptation Fund endorsed the project?**

**Response:** Yes

**Secretariat:** Letters of endorsement have been provided for all three participating countries and are signed by the primary contacts of the respective Designated Authority entities on file with the Fund: Dr. Aiman Abdalla Soleiman for Jordan, H.E. Tamara El-Zein for Lebanon, and Dr. Saber Mahmoud Osman for Egypt. The letters endorse the programme under the correct title. However, Egypt's letter states that the programme will be executed by the Governments of Egypt, Jordan, Lebanon and Sudan, although Sudan is not a participating country. (LoEs, pp. 1–3). If Sudan is expected to join the programme then the LOE must be submitted with the next submission. Please note all relevant sections need to be appropriately revised to include Sudan.

**Does the project/programme support concrete adaptation actions to assist the country or countries in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience? In case of regional project/programme, is there added value using the regional approach, compared to implementing similar activities in each country individually?**

**Response:** Not Cleared

**Secretariat:** General note on proposal-stage requirements:

At the concept-note stage, only the Adaptation Fund results framework alignment table in Part III is required, as applicable. A detailed results framework, implementation schedule and comprehensive implementation arrangements may be developed at the fully developed proposal stage. Given the programme's regional scope and AFCIA partnership context, a brief description of the regional and country-level management, coordination and institutional partnership arrangements would be helpful where needed to establish the feasibility, ownership and coherence of the proposed approach.

CR1: The concept identifies relevant interventions, including digital monitoring, early water-stress detection, climate stress-testing, NRW management and institutional capacity-building. However, the adaptation logic and regional added value require further clarification.

Please:

- Explain, for each country, the relationship between the relevant climate hazards, the vulnerability of the targeted water system, the proposed interventions, the operational decisions or actions they will enable, and the expected measurable adaptation benefits.
- Clarify how the proposed digital monitoring and stress-testing systems will incorporate climate information and

strengthen resilience beyond routine utility modernization, efficiency improvements or NRW management.

- Clarify the distinction and sequencing between the demonstration and validation of innovations under

Component 1 and the installation, testing and validation of digital systems under Component 2.

- Further explain which methodologies, activities and results depend on joint regional implementation, beyond parallel country pilots followed by knowledge sharing.

The concept provides a problem statement, proposed solution and component-level results, but it does not present a clear theory of change linking the identified climate risks and barriers to the proposed activities, changes in utility practices, measurable adaptation outcomes and longer-term regional impact. In particular, it assumes that improved information will lead to operational action and reduced water losses, and that regional knowledge products will lead to replication and scaling, without explaining the necessary intermediate changes and enabling conditions. (pp. 11–16 and 39–42)

CR2: Please consider developing a theory of change that:

Clearly links the climate hazards, water-system vulnerabilities and underlying barriers to the programme's activities, outputs, short- and medium-term outcomes, and expected adaptation and scaling impacts; and Identifies the principal assumptions and enabling conditions underlying these pathways, including utility capacity and financing to act on the information generated, operation and maintenance of the digital systems, completion of any associated network works, and institutional and financial uptake of successful innovations, and reflects these causal links in the results framework.

**Does the project/programme help spread innovative adaptation practices, tools and technologies that have demonstrated success in one country to another country, countries or regions; and/or Does the project/programme pilot at larger scale innovative adaptation practices, tools or technologies generated that have demonstrated viability at a small scale?**

**Response:** Not Cleared

**Secretariat:** The concept describes technological, operational, systemic and governance innovation, including sensors, acoustic leak-detection devices, smart meters, GIS, SCADA integration, digital dashboards and predictive analytics. However, most of these are established technologies, and the concept does not clearly identify whether the principal innovation is the technology, the integrated utility-management model, the transition to anticipatory operations, the Innovation Hubs, or a combination of these elements. (pp. 18–20)

CR3: Please clearly define the principal innovation or integrated innovation model and explain:

What is innovative relative to current practice in each country; and

How it goes beyond conventional digitalization, NRW reduction or utility modernization to deliver climate-adaptation benefits.

The concept repeatedly describes the proposed technologies and approaches as “proven” and states that they will be demonstrated, validated, adapted, replicated and scaled. However, it does not identify the previous applications supporting these claims or clearly position the innovations along the innovation pathway. (pp. 18–22)

CR4: Please identify the principal innovations expected to be supported and clarify:

Where they were previously demonstrated, at what scale, with what results, and their current maturity;

What remaining technical, operational, institutional or adaptation uncertainty the programme will test; and

Whether each innovation will be adapted to a new context, transferred between countries, piloted at a larger

scale or more broadly replicated.

Component 1 provides for innovations to be identified, selected, demonstrated and adapted during implementation. At the same time, Component 2—representing approximately 62% of the activity budget—already identifies the types of technologies to be procured and deployed. The Innovation Hubs are expected to manage this process, but their precise functions and decision-making role remain unclear. This is particularly important given that the programme will form part of the AFCIA partnership. (pp. 12–15 and 18–20)

CR5: Please clarify the programme's innovation-delivery model, including:

Whether it will implement a predefined innovation package or select innovations during implementation;

If selection will occur later, the sourcing, selection, support and validation process, including the respective roles of the Innovation Hubs and participating stakeholders; and

The distinction and sequencing between the innovation activities under Components 1 and 2.

The concept states that implementation across three countries will generate comparable evidence and enable regional replication through technical guidance, replication packages and knowledge exchange. However, it does not yet provide a common testing framework or identify concrete institutional and financing pathways for scaling successful innovations. (pp. 16–17 and 21–22)

CR6: Please strengthen the regional innovation and scaling pathway by clarifying:

The common hypotheses, indicators and success criteria that will allow the innovations to be evaluated across the three countries;

Which innovations or lessons will be actively transferred between countries; and

The institutional commitments and financing pathways through which successful innovations will be replicated or scaled beyond the initial pilots.

The concept describes potential country-specific benefits, including reduced water losses, improved service reliability, lower utility operating costs and reduced pressure on climate-stressed water resources. It also identifies women, youth, displaced and refugee populations, persons with disabilities, older persons and low-income communities as potentially vulnerable groups. However, the pilot sites and beneficiaries remain largely unidentified, and the proposal does not sufficiently demonstrate how the utility-level interventions will deliver equitable and measurable benefits to these groups. (pp. 23–26)

CR7: Please strengthen the beneficiary and benefits analysis by:

Identifying the expected direct and indirect beneficiaries in each country, disaggregated by sex and relevant vulnerability characteristics where possible - if this will be identified in the next stage in detail please explicitly mention this;

Explaining how climate vulnerability, water-service vulnerability and access and equity considerations will inform the selection of pilot sites and beneficiaries; and

Clarifying how vulnerable groups will benefit from and participate in project design, Innovation Hub governance, implementation and monitoring, and how the resulting social, economic and environmental benefits will be measured.

The adequacy of measures to avoid or mitigate negative impacts can be addressed separately under the environmental and social risk criterion.

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

**Response:** Not Cleared

**Secretariat:** The concept describes potential country-specific benefits, including reduced water losses, improved service reliability, lower utility operating costs and reduced pressure on climate-stressed water resources. It also identifies women, youth, displaced and refugee populations, persons with disabilities, older persons and low-income communities as potentially vulnerable groups. However, the pilot sites and beneficiaries remain largely unidentified, and the proposal does not sufficiently demonstrate how the utility-level interventions will deliver equitable and measurable benefits to these groups. (pp. 23–26)

CR8: Please strengthen the beneficiary and benefits analysis by:

Identifying the expected direct and indirect beneficiaries in each country, disaggregated by sex and relevant vulnerability characteristics where possible;

Explaining how climate vulnerability, water-service vulnerability and access and equity considerations will inform the selection of pilot sites and beneficiaries; and

Clarifying how vulnerable groups will benefit from and participate in project design, Innovation Hub governance, implementation and monitoring, and how the resulting social, economic and environmental benefits will be measured.

The adequacy of measures to avoid or mitigate negative impacts can be addressed separately under the environmental and social risk criterion.

**Does the project engage, empower and/or benefit the most vulnerable communities and social groups?**

**Response:** Not Cleared

**Secretariat:** The concept identifies women, youth, displaced and refugee populations, persons with disabilities, older persons and low-income communities as potentially vulnerable groups. However, most pilot locations remain unidentified, and the proposal does not sufficiently establish which groups are most vulnerable in each intervention area, how they have influenced the project design, or how they will participate in decisions and benefit from the utility-level investments. (pp. 23–26 and 34–35)

CR9: Please:

Identify the most vulnerable communities and social groups expected to be reached in each country and explain how climate and water-service vulnerability will inform pilot selection; and

Clarify their roles in project design, Innovation Hub governance, implementation and monitoring, and the specific benefits and indicators through which their engagement, empowerment and equitable access to benefits will be demonstrated.

**Is the project/programme cost-effective? In the case of regional project/ programmes, does the regional approach support cost effectiveness? Does the project engage, empower and/or benefit the most vulnerable communities and social groups?**

**Response:** Not Cleared

**Secretariat:** The concept argues that digital monitoring and early detection are more cost-effective than major supply-side infrastructure and that the regional approach will reduce duplication through shared technical development, learning and replication products. However, the analysis remains qualitative and does not provide sufficient information on the scale, quantities or country allocation of the proposed investments, particularly the USD 2.57 million under Component 2, or demonstrate the cost savings generated by regional implementation. (pp. 9–10 and 26–27)

CR10: Please strengthen the cost-effectiveness analysis by:

Comparing the proposed interventions with feasible alternatives for achieving the same adaptation outcomes and providing appropriate indicative costs and expected benefits by country; and

Demonstrating the specific efficiencies or cost savings of the regional approach compared with implementing three separate country projects.

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

**Response:** Not Cleared

**Secretariat:** The concept demonstrates alignment with relevant national climate, adaptation, water-sector and development frameworks in Egypt, Jordan and Lebanon, as well as relevant regional water-security strategies:

At the regional level, the Arab Strategy for Water Security in the Arab Region, the Arab Initiative for Mobilizing Climate Finance for Water, and the Arab Strategy on Water Security in the Arab Region: Meeting the Future Challenges and Needs of Sustainable Development (2010–2030);

In Egypt, the National Water Resources Plan 2017–2037, National Climate Change Strategy 2050, Egypt Vision 2030, the NDC, and priorities identified through the NAP process;

In Jordan, the Economic Modernization Vision, Green Growth National Action Plan for the Water Sector 2021–2025, National Water Strategy 2023–2040, National Climate Change Policy 2022–2050, the NDC, and the NAP; and

In Lebanon, the National Water Sector Strategy 2024–2035, National Adaptation Plan 2025–2035, and NDC 3.0.

The concept explains how the proposed NRW reduction, digital monitoring, climate-informed utility management and institutional strengthening support the priorities identified in these frameworks. (pp. 26–28)

The concept discusses national climate and water-sector strategies and identifies potential technologies, but it does not explain whether these technologies respond to priorities identified through the participating countries' TNAs or TAPs. (pp. 18–20 and 27–29) This is not necessarily a standalone eligibility issue, but it would strengthen both the national-alignment and innovation rationale.

CR11: Please identify any relevant TNAs and TAPs for Egypt, Jordan and Lebanon and explain how the proposed innovations respond to their adaptation-technology priorities. Where no relevant or current TNA/TAP exists, please state this and explain the alternative national process or evidence used to prioritize the technologies.

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

**Response:** Not Cleared

**Secretariat:** Section G identifies relevant national frameworks. For Egypt, it refers to the Egyptian Code for Public Water Supply and Sanitation Networks and HCWW's internal standards, together with environmental and labour legislation. For Jordan and Lebanon, however, the section principally lists environmental laws, assessment regulations and national policies rather than the technical standards applicable to the proposed equipment, digital systems and physical works. The section also does not link the identified requirements to the relevant component activities or explain the process and responsibilities for ensuring compliance. (p. 28)

CR12: Please:

Identify and link the applicable technical, environmental, labour and occupational health and safety standards to the proposed country activities, including network construction or rehabilitation, equipment installation, SCADA and digital-system integration, and any renewable-energy retrofits; and

Describe the process and responsibilities for ensuring compliance, including technical review, permitting, incorporation of standards into procurement, supervision, testing and commissioning.

The final standards and compliance requirements may be confirmed at the fully developed proposal stage once the sites, technologies and works have been defined. However, the concept should provide a sufficiently clear compliance framework and identify the responsible national institutions.

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

**Response:** Not Cleared

**Secretariat:** Component 3 provides for performance assessment, documentation of implementation challenges, knowledge products and regional exchange. The MEL section also refers to feedback loops, course correction and testing improvements through the Innovation Hubs. However, the learning approach focuses primarily on documenting and disseminating "proven" or "successful" innovations. It does not explain how underperformance, failure or unintended results will be identified and used to adapt, discontinue or replace innovations during implementation. (pp. 15–16, 30–31 and 38–39)

CR14: Please strengthen the innovation-learning approach by:

Defining the learning questions and performance criteria that will identify what is working, what is not working and why across the three country contexts; and

Explaining how and by whom the findings will inform decisions to adapt, continue, discontinue, replace or scale an innovation, including how lessons from unsuccessful or underperforming approaches will be documented and shared.

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

**Response:** Not Cleared

**Secretariat:** The concept and Initial Consultations Report identify relevant stakeholders and describe consultations undertaken or planned. However, the extent of consultation completed to date is unclear. In Egypt, community-level engagement primarily derives from the earlier Hayenna process; in Jordan, the documented

engagement is mainly with water-sector institutions; and in Lebanon, consultation with NLWE is confirmed while engagement with other institutions and vulnerable groups appears largely prospective. The PFG appropriately includes USD 30,000 for further consultations, but this planned process is not clearly explained in the concept. (pp. 31–32; Initial Consultations Report; PFG Activity 5)

CR15: Please revise the consultation section to:

Clearly distinguish consultations already undertaken for this programme from earlier consultations and planned engagement, provide available evidence of the consultations completed, and acknowledge remaining gaps by country and stakeholder group; and

Explain the consultation process to be undertaken during full proposal preparation using the PFG, including the stakeholders and vulnerable groups to be engaged and how their inputs will inform pilot selection, innovation and Hub design, safeguards, gender-responsive measures and the final programme design.

The PFG should also correct the references to consultations “across four countries” to three countries (unless a fourth country is expected in the next submission - in this case make relevant edits to all previous sections).

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

**Response:** Not Cleared

**Secretariat:** The full-cost section explains the climate rationale for investing in digital monitoring, stress-testing, institutional capacity and regional replication. However, it does not sufficiently demonstrate the climate-adaptation and innovation additionality of these investments relative to routine NRW reduction and utility digitalization. It also does not establish that the programme can deliver its intended results entirely with AF resources. In Egypt, the AF-financed digital layer may depend on separately financed network construction or rehabilitation. (pp. 5–8, 16–17 and 33)

CR16: Please:

Explain the specific climate-adaptation and innovation value added by AF financing beyond the NRW, network rehabilitation and digitalization activities already planned or under implementation; and

Demonstrate that the AF-financed programme is self-contained and that its outputs and outcomes can be achieved without reliance on co-financing or blended resources, clarifying in particular how the Egypt intervention would proceed if the associated government-financed network works are delayed or do not materialize.

Where complementary investments are envisaged, please clearly distinguish them from the AF-financed scope and confirm that they are not prerequisites for achieving the programme’s intended results.

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

**Response:** Not Cleared

**Secretariat:** The concept includes an alignment table linking the programme objectives and outcomes with several outcomes and outputs of the Fund’s Strategic Results Framework. However, the table combines several Fund outcomes within individual rows, does not consistently distinguish programme outcomes from outputs, and does not clearly demonstrate the relationship between the programme’s innovation and adaptation results and the selected Fund results. (pp. 38–45)

CAR2: Please revise the Part III alignment table to:

Distinguish programme outcomes from outputs and align each with the most relevant Fund outcome or output and corresponding indicator; and

Ensure that the selected Fund results reflect the programme's intended adaptation and innovation results and that the grant amounts reconcile with the component budget.

A detailed results framework, including baselines, targets, indicator methodologies and monitoring arrangements, may be provided at the fully developed proposal stage.

Outcome 8 is reflected, but not yet appropriately or consistently. It is included under Objective 1 through Indicators 8A and 8B, and Outputs 8.1 and 8.2 are also cited. However, Outcome 8 is treated as one of several results associated only with the USD 1 million Innovation Hub component, even though innovation is the programme's central rationale and spans the digital demonstrations under Component 2 and the evidence and scaling activities under Component 3. In addition, Indicator 8A concerns innovations successfully reaching scale-up, whereas the concept does not yet clearly identify which innovations will reach scale, as opposed to being demonstrated, adapted or packaged for future replication. The required local innovation participation or benefit under Indicators 8A, 8.1A and 8.1B is also not clearly demonstrated. (pp. 40–44)

CAR3: Please consider revising the Part III alignment table to:

Position Outcome 8 and its relevant outputs and indicators across the components that identify, pilot, generate evidence on and support the scaling of innovations, including appropriately reflecting Component 3 under Output 8.2; and

Use Indicator 8A for innovations expected to reach scale during the programme, clearly distinguishing these from innovations that will only be identified, piloted or prepared for subsequent replication, and demonstrate the associated local innovation participation or benefit.

<https://www.adaptation-fund.org/document/alignment-with-adaptation-fund-results-framework-template-and-guidance-dec-2025/>

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

**Response:** Not Cleared

**Secretariat:** The concept states that digital systems will be embedded within utility operations, staff will be trained, responsibilities will be assigned, and participating institutions will be encouraged to budget for operation, maintenance, software and equipment replacement. It also anticipates that the Innovation Hubs and regional knowledge platform will continue supporting replication. However, the country-specific ownership, handover, recurrent-cost and financing arrangements remain undefined. For example, Jordan's operation and maintenance arrangements are still subject to a feasibility assessment, while the institutional host for the Lebanon Hub remains undecided. (pp. 16–17 and 33–34)

CR17: Please strengthen the sustainability arrangements by:

Clarifying, for each country, ownership and responsibility for operating, maintaining and replacing the equipment and digital systems, including staffing, software, licensing, connectivity, electricity, data management, environmentally sound equipment disposal and sources of recurrent financing; and

Defining the post-project governance and financing of the Innovation Hubs and regional knowledge platform,

including continued stakeholder participation, and explaining how validated innovations will be incorporated into utility plans, budgets and wider investment programmes.

The concept proposes horizontal and vertical scaling through replication packages, regional knowledge exchange, integration into utility operations and country-specific replication pathways. However, it does not identify the practical steps, resources or commitments through which validated innovations will move from the initial pilots to wider adoption. (pp. 20–22 and 33–34)

CR18: Please strengthen the scale-up pathways by:

Identifying the innovations to be scaled, prospective adopters, intended scale and performance criteria for determining readiness for replication; and

Clarifying the responsible institutions, investment requirements, financing sources and procurement or policy mechanisms needed to support wider adoption beyond the initial pilots.

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

**Response:** Not Cleared

**Secretariat:** USPs:

The concept provides a preliminary Category B classification based on equipment installation and minor works within existing infrastructure. However, some pilot locations and interventions remain unidentified, and the classification rationale does not account for possible new network works in Egypt, renewable-energy retrofits in Lebanon or innovations to be selected during implementation. The programme does not acknowledge or provide an approach for unidentified subprojects. (pp. 5–8, 16–17 and 37–38)

CAR4: Please:

Identify and classify the activities and locations that remain unidentified, explaining what will be confirmed through the PFG and what, if anything, will remain unidentified at the fully developed proposal stage;

Justify the use of USPs and provide a fixed framework covering eligible activities, exclusions, site-selection criteria and procedures and responsibilities for screening, assessment, consultation, management and monitoring; and

Reassess and justify the environmental and social categorization based on the clarified scope. If USPs will remain, provide an appropriate ESMF at the fully developed proposal stage and confirm that AF financing will not support any USP for which both the nature of the activity and the relevant environmental and social setting remain unknown.

ESP screening table:

The ESP screening table identifies several relevant risks, including unequal access to benefits, exclusion of vulnerable groups, temporary water-service interruptions, occupational health and safety risks, waste generation and impacts from minor excavation. However, the table is internally inconsistent because several principles are marked as requiring no further assessment while potential risks and mitigation measures are simultaneously identified. Because sites and some activities remain unidentified, it is also premature to conclude that no further assessment is required for several of these principles.

The third column frequently combines risks with mitigation commitments such as “will comply,” “will avoid,” “will minimize” and “will implement.” At concept stage, it should first identify the potential adverse impacts and risks neutrally. The assessment and mitigation measures can then be developed through the ESMF/ESMP at full

proposal stage.

Some entries also describe positive benefits or proposed mitigation rather than potential adverse impacts and risks. [E.g. The Climate Change row only states that the programme contributes positively to adaptation. That is a project benefit, not an assessment of potential adverse risks. The row should instead consider possible maladaptation or climate-related risks to the sustainability and performance of the proposed infrastructure and digital systems]. (pp. 34–35)

CAR5: Please:

Use an “X” under “No further assessment required for compliance” only where no further assessment is genuinely required, leaving the cell blank where risks are identified or site- or activity-specific screening remains necessary; and

Revise the third column to focus on neutral identification of potential adverse impacts and risks, including risks arising from unidentified activities and locations. Assessment and mitigation measures should be developed through the appropriate ESMF and/or ESMP at the fully developed proposal stage.

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

**Response:** Not Cleared

**Secretariat:** The concept provides an initial mapping of related initiatives. However, the ongoing Jordan NRW Reduction Programme covers Aqaba Water Company and many of the same technologies proposed under this programme, while the earlier MiyahCon project in Lebanon worked with NLWE and supported similar GIS, hydraulic-modelling, SCADA, DMA-monitoring and leak-detection activities. Because the proposed pilot sites and detailed interventions remain unidentified, the concept cannot yet demonstrate that the proposed activities will not duplicate these investments. The table itself identifies further consultations and investigation as necessary. (pp. 28–30)

CR13: Please:

Clarify the geographic, technical, beneficiary and financing boundaries between the proposed programme and each relevant ongoing or previous initiative, particularly the Jordan NRW Reduction Programme and the MiyahCon project in Lebanon; and

Explain how existing systems, equipment, data and lessons will be used as the programme baseline, what additional activities the AF will finance, and how coordination will prevent duplication or double financing.

### Does the project advance gender equality and the empowerment of women and girls?

**Response:** Not Cleared

**Secretariat:** The concept recognizes that women may be disproportionately affected by unreliable water services and underrepresented in technical training and decision-making. It proposes women’s participation in consultations, Innovation Hub governance and capacity-building. However, the Initial Gender Assessment is largely descriptive and does not sufficiently analyse country-specific gender inequalities or demonstrate how the project will achieve gender-equality and empowerment outcomes beyond women’s participation. Girls are not substantively considered. (pp. 23–26 and 34–35)

CAR1: Please:

Strengthen the initial gender assessment by analysing the differentiated impacts of climate-related water insecurity and the barriers facing women and girls in each country; and

Demonstrate how the findings inform gender-responsive activities, outcomes, indicators, targets and budget provisions, including measures that go beyond participation to advance women's voice, decision-making and access to project benefits.

A detailed Gender Action Plan with country-specific actions, responsibilities, targets and budget should be provided at the fully developed proposal stage.

## Resource Availability

### Is the requested project funding within the parameters for large grants set by the Board?

**Response:** Cleared

**Secretariat:** The requested financing of USD 5 million is within the parameters established by the Board. Decision B.45/44(f) invited UN-Habitat to develop three regional programme proposals for the Asia-Pacific, Arab and African States, for up to USD 5 million each, and to consider submitting them under the Large Grants for Innovation funding window. The present proposal is the regional programme for the Arab States and requests USD 5 million. It is therefore within the amount specifically authorized by the Board.

For a USD 5 million regional programme covering three countries, the maximum PFG amount is:

Base amount for up to two countries: USD 150,000

Additional amount for the third country: USD 15,000

Maximum applicable amount: USD 165,000

The PFG requests USD 152,000 for preparation activities plus an IE management fee of USD 12,920, equivalent to exactly 8.5 per cent of the activity subtotal. The total request of USD 164,920 is correctly calculated and is USD 80 below the applicable ceiling. (pp. 1–3).

**Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project budget before the fee? Are the Project/Programme Execution Costs at or below 9.5 per cent of the total project/programme budget (including the fee)? For regional projects/programmes, are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 10 per cent of the project/programme for implementing entity (IE) fees and at or below 10 per cent of the project/programme cost for the execution costs?**

**Response:** Not Cleared

**Secretariat:** The IE management fee is 8.50% and the execution cost is approximately 9.50%. Note that for regional projects/ programmes IE fee and EE fee caps are 10% each.

PFG application:

The eight proposed activities are broadly relevant to developing the fully developed proposal. They address climate-risk and site assessment, technical design, Innovation Hub arrangements, safeguards and gender, consultations, cost-effectiveness and sustainability, results and learning, and proposal preparation. However,

some internal inconsistencies and overlaps should be addressed. The PFG refers to four countries although the programme covers three, cites Component 2 as USD 2 million rather than USD 2.57 million. The budget notes also do not provide a sufficient basis for assessing several activity costs or clearly distinguish the data and stakeholder-engagement work financed under different activities. (pp. 1–5)

CAR6: Please revise the PFG request to:

Correct the country and component-budget inconsistencies;

Distinguish the scope and outputs of Activities 1 and 7 and Activities 4 and 5, avoiding duplication between climate-risk data collection, safeguards preparation, the Stakeholder Engagement Plan and consultations.

The PFG includes Innovation Hub design, technology assessment and a scaling strategy, but it does not explicitly provide for strengthening the programme’s innovation rationale and theory of change in response to the concept-stage gaps. It also assumes that an ESMP will be the appropriate safeguards instrument before the treatment of unidentified subprojects and sites has been determined. (pp. 2–5)

CAR7: Please clarify that the relevant PFG activities will:

Establish the evidence, maturity, remaining uncertainty, testing criteria and scaling pathway for the innovations; refine the theory of change; and define how learning, including from unsuccessful approaches, will inform programme decisions; and

Determine the appropriate environmental and social instruments at the fully developed proposal stage, including the USP approach and an ESMF if applicable.

## Eligibility of IE

### Is the project submitted through an Implementing Entity accredited by the Board?

Response: **Cleared**

**Secretariat:** Accredited (Special extension per Decision B.46/9)

Accreditation Expiration Date: 30 October 2027

## **Funding Proposal Template**

Application Template for Fully-Developed Proposal and Project Concept Proposal<sup>1</sup>



**ADAPTATION FUND**

## **PROGRAMME ON INNOVATION: LARGE GRANTS PROJECTS**

### **REQUEST FOR PROJECT FUNDING FROM THE ADAPTATION FUND**

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

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

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

Complete documentation should be sent to:

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

---

<sup>1</sup> Single Country and Regional Concept proposals should complete Part I and Part II of the Project Proposal Template.



ADAPTATION FUND

## SINGLE COUNTRY/ REGIONAL INNOVATION PROJECT/PROGRAMME PROPOSAL

### PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region

Country/ Countries: Egypt, Jordan, and Lebanon

Thematic Focal Area<sup>2</sup>: Water management

Type of Implementing Entity: Multilateral Implementing Entity

Implementing Entity: UN-Habitat

Executing Entities: **Egypt**: The Holding Company for Water and Wastewater / **Jordan**: Aqaba Water Company / **Lebanon**: The North Lebanon Water Establishment (NLWE)

Amount of Financing Requested: \$5,000,000 (in U.S Dollars Equivalent)

### Project / Programme Background and Context:

The Arab region is one of the most water-scarce regions in the world, with 19 out of 22 countries falling below the water scarcity threshold of 1000 m<sup>3</sup> per capita per year (UNESCO, 2024)<sup>3</sup>. Across the three participating countries, Egypt, Jordan, and Lebanon, in this proposal, climate change is intensifying already critical pressures on urban water systems. Rising

---

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

<sup>3</sup> World Water Development Report 2024.

temperatures, prolonged droughts, and greater variability in rainfall are reducing water availability and reliability of water resources while simultaneously increasing urban water demand, placing growing stress on already constrained water supply systems, particularly in rapidly urbanizing and conflict-affected settings.

As climate change intensifies water scarcity, the consequences of existing systemic inefficiencies become increasingly severe. High levels of non-revenue water (NRW), aging infrastructure, limited network monitoring, and reactive maintenance practices result in greater water losses, higher operational costs, and declining service reliability under increasing climate stress. Existing operational practices also require significant improvement. Leak detection and repairs are typically complaint-based rather than preventive, maintenance is often delayed, and operational decisions are constrained by limited access to real-time data and system-wide information. These challenges reduce the ability of water utilities to efficiently manage increasingly scarce water resources and respond effectively to climate-related shocks.

At the same time underlying vulnerabilities such as institutional and technical capacity gaps further constrain effective water governance. In several participating countries, economic crises, conflict, and displacement have weakened public service delivery systems, reduced operational budgets, and increased pressure on already fragile infrastructure. Utilities often face shortages of skilled personnel, insufficient technical capacity to operate digital systems, and limited institutional arrangements for long-term asset management and evidence-based planning. Urban areas hosting displaced populations face particularly acute challenges, with rising demand for water services coupled with declining system performance.

The proposed regional project responds to this shared challenge by strengthening urban water resilience across three countries to adapt to climate change stresses. By combining technology deployment, institutional capacity development, and regional knowledge exchange, the project aims to alleviate pressure on increasingly scarce water resources and strengthen the climate resilience of urban water supply systems across the participating countries. This will be achieved by reducing water losses, improving service reliability, and enhancing the ability of water utilities to manage increasing climate-induced water stress. While the participating countries differ in their socio-economic and environmental conditions, they face closely aligned challenges in managing urban water systems under climate stress.

## **Egypt**

Egypt faces structural water scarcity compounded by climate risk and rapid urbanization. Rising temperatures, increased evapotranspiration, and seawater intrusion into coastal aquifers intensify pressure on already limited freshwater resources. Per capita renewable water resources have declined to below 600 m<sup>3</sup>/year, placing the country well below the international water scarcity threshold.

The project will target Damietta Governorate, a coastal Nile Delta governorate of approximately 1.5 million people at the mouth of the Damietta branch of the Nile on the Mediterranean coast. Damietta Water and Sanitation Company (DWSC), the HCWW affiliate responsible for the governorate, already reports seawater intrusion affecting groundwater quality, and the city's position at the downstream end of its Nile branch exposes it to upstream pollution loading before treatment. This strains the city's water treatment plants that are already operating close

to their combined design capacity (production of roughly 139,640 m<sup>3</sup>/day against a maximum capacity of about 146,880 m<sup>3</sup>/day), and its single wastewater treatment plant (El-Ananiya, built 1991) that is currently receiving roughly a third more flow than its 90,000 m<sup>3</sup>/day design capacity, with implications for effluent quality entering Lake Manzala, and potentially affecting the potable water network.

Damietta is also expanding rapidly. The governorate's strategic plan identifies four priority urban expansion zones, including Shatta, El-Senanya, Ras El-Bar/Ezbet El-Bourg, and Al-Shoura'a, several of which are already growing informally onto agricultural land ahead of planned infrastructure. UN-Habitat Egypt's Hayenna Integrated Urban Development Project has already carried out technical and socioeconomic work in one of these zones, Al-Shoura'a, where a 2024 gap analysis found that while the existing settlement is 99% covered by water network, its adjacent planned expansion area is roughly 98% unserved by water network and has no wastewater network at all. This is illustrative of the kind of gap the pilot aims to address; the specific pilot zone(s) within Damietta will be confirmed during the inception phase in coordination with DWSC and the Governorate, drawing on this and comparable evidence for the other expansion zones.

Depending on the zone(s) ultimately selected, the Egypt pilot may involve a uniquely contextualized mix of activities. This is potentially combining water loss reduction on the existing city water network with ensuring that any newly built network serving expansion areas is climate-resilient and digitally monitored from the outset, rather than retrofitted later. Where new water network construction is involved, the Adaptation Fund contribution is proposed to finance the digital layer, GIS-integrated design data, pressure and flow sensors, smart metering, and predictive-maintenance protocols, embedded into the water network as it is built or rehabilitated, together with the institutional systems (Climate-Resilient Water Innovation Hub, training, monitoring) needed to operate it, while base civil works remain the responsibility of DWSC's and the government's own capital investment plan.

## **Jordan**

Jordan ranks as the second most water scarce country in the world, with an annual per capita water consumption of only 60 m<sup>3</sup>, far below the global average. Climate change is intensifying these challenges further; irregular rainfall, prolonged droughts, flash flooding, and rising temperatures are disrupting the water cycle, reducing available resources, and threatening the reliability of water supply systems. Based on the National Climate Change Adaptation Plan for Jordan (NAP)<sup>4</sup> climate change, climate-related hazards are affecting Jordan, such as extreme temperatures, droughts, flash floods, storms, and landslides and affecting many sectors including water. Also, the National Climate Change Policy of the Hashemite Kingdom of Jordan 2022-2050 (NCCP)<sup>5</sup>, climate projections to 2100 reveal that Jordan is likely to experience 2.1°C increase in air temperature, and drier climate with an average decrease in annual rainfall of 21%.

At the same time, Jordan's water sector faces a chronic financial deficit, with tariffs insufficient to cover operational and maintenance costs, leaving the sector heavily dependent on

---

<sup>4</sup> National Climate Change Adaptation Plan for Jordan (NAP) -2022

<sup>5</sup> National Climate Change Policy for the Hashemite Kingdom of Jordan

government subsidies and limiting its capacity to invest in infrastructure and service improvements.

This scarcity is further aggravated by a Non-Revenue Water (NRW) rate of 42.3%, as reported by the Ministry of Water and Irrigation, reflecting substantial losses through leakage and illegal use across supply networks. Water demand continues to rise due to rapid population growth, a significant influx of refugees, expanding economic activity, and growing agricultural needs, all placing mounting pressure on an already critically limited resource.

In response to the climate projected impacts, the NCCP identifies water supply, conservation, and infrastructure development as a priority adaptation pillar, with Action W1.4 calling to "improve efficiency in water use for sustainable development" through water-saving technologies and enhanced water-use efficiency at household, business, and utility levels in both urban and rural settings. The project is further aligned with the adaptation priorities of Jordan's Updated Nationally Determined Contribution (NDC, 2021)<sup>6</sup> and its National Adaptation Plan (NAP)<sup>7</sup>, submitted to the UNFCCC in March 2025, both of which identify Water Resource Management as a priority adaptation sector and call for strengthened resilience of water infrastructure and services under intensifying climate stress. Under its Water Resources Management pillar, the NAP specifically calls for "reducing non-revenue water loss in domestic and irrigation water supply systems through rehabilitation and maintenance of water networks and enforcement of law", an action the project directly delivers on through its leakage detection and network rehabilitation components, with the updated NDC's adaptation vision and objectives directly aligned with the NAP. Jordan's forthcoming NDC 3.0 marks the beginning of a 2050 net-zero trajectory and places renewed emphasis on enhancing water security as a core adaptation priority, built on the assumption that gradual technology transfer, including renewable energy, electric vehicles, digital MRV tools, and efficiency measures, will enable higher mitigation ambition and improved MRV accuracy. At the national strategy level, Jordan's National Water Strategy 2023–2040<sup>8</sup> sets "Achieving a Sustainable Balance between Water Supply and Demand" as a central objective, targeting closure of the supply-demand gap across all governorates by 2030 and reducing NRW across municipal water systems to 25% by 2040, with leakage reduction identified as a primary pathway to both goals; this is further reinforced by the National Economic Modernization Vision (2022–2033)<sup>9</sup>, which calls on the water sector to utilize technology for water sustainability and targets a 2% annual reduction in NRW. This project directly addresses these national targets by deploying technological solutions for leakage detection and network maintenance, reducing NRW, relieving pressure on clean water resources, and building a more climate-resilient water system.

Also, Jordan has already made NRW reduction a top government priority, with the national NRW percentage decreasing from 52.5% in 2021 to 42.3% in 2025. In line with these national targets and goals, this project is expected to generate wide-ranging positive impact across multiple dimensions by significantly reducing water leakages through detection sensors and valve actuators. By recovering water already abstracted rather than developing new sources,

---

<sup>6</sup> Jordan's Nationally Determined Contribution (NDC) 3.0.

<sup>7</sup> The National Climate Change Adaptation Plan of Jordan - 2022.

<sup>8</sup> Jordan's National Water Strategy 2023–2040.

<sup>9</sup> Jordan Economic Modernization Vision (2022–2033).

the project strengthens Jordan's adaptive capacity against worsening climate variability. Every cubic meter recovered through NRW reduction is effectively "new" water without new abstraction, which is critical where renewable water resources are already climate constrained. This reduces pressure on climate-stressed aquifers and surface sources, building a buffer against increasingly frequent drought years and heat-driven demand peaks, without the cost or environmental footprint of expanding infrastructure. This is particularly critical given Jordan's position as one of the world's most water-scarce countries. Beyond utility-level resilience, reduced losses help sustain dependent ecosystems, such as wadis, springs, and aquifers that in turn provide natural water purification, biodiversity habitat, and carbon sequestration services, reinforcing the project's alignment with broader climate resilience and nature-based objectives.

Beyond improving water efficiency, the project will generate significant economic, social, and environmental benefits. Economically, it will lower operational costs, reduce dependence on subsidies, and improve the financial sustainability of the water sector by ensuring that treated water reaches its intended users rather than being lost in the network. Socially, it will enhance the equity and reliability of water supply across all governorates, ensuring more consistent access for households, particularly in underserved areas. Environmentally, reduced losses will ease the strain on groundwater and surface water resources, contributing to their long-term preservation and supporting Jordan's climate adaptation goals. Collectively, these outcomes will move Jordan meaningfully closer to water security, strengthening resilience against future climate shocks and laying the foundation for a more sustainable and self-sufficient water sector.

The Jordan pilot will be implemented in partnership with Aqaba Water Company (AWC), the service provider responsible for water and wastewater services in Jordan's southern region. Accordingly, the intervention will be implemented in one of the governorates served by AWC: Aqaba, Ma'an, Tafilah, or Karak. Together, these governorates represent approximately 1.2 million people and encompass diverse urban and semi-urban contexts facing increasing water stress due to limited water availability, growing demand, and climate variability, as indicated in NDC 3.0, regarding the climate scenarios: +1.2–2.2 °C warming by 2050, severe water stress (<100 m<sup>3</sup>/person/year). The specific governorate and pilot zone will be identified and confirmed through the multilayered vulnerability assessment to ensure evidence-based site selection in close coordination with the Ministry of Water and Irrigation (MWI), AWC, and relevant local stakeholders. The selection will be guided by climate vulnerability assessments, and water sector needs, and opportunities to maximize the impact of climate and water resilience investments in areas that can benefit most from targeted adaptation interventions.

## **Lebanon**

Lebanon's water sector is increasingly vulnerable to climate change, which is exacerbating long-standing structural, institutional, and operational challenges. Rising temperatures, declining precipitation, prolonged droughts, more frequent extreme rainfall events, and increasing hydrological variability are reducing the reliability of water resources and placing growing pressure on water utilities. Observed climate data for 1950–2020 show that Lebanon's annual mean temperature increased by approximately 1.6°C, with an accelerated warming trend during 1991–2020. Over the same 1950–2020 period, precipitation showed a declining

trend of approximately 0.53 mm per decade, alongside strong inter-annual variability.<sup>10</sup> National climate projections point to precipitation declines of roughly 10–20% by 2040 (projection period 2025–2044), rising to 25–45% by the end of the century (projection period 2080–2098), alongside increased evapotranspiration, reduced snow cover, and longer drought periods.<sup>11</sup> Lebanon's Ministry of Energy and Water (MoEW) estimates average annual precipitation at approximately 8,559 million m<sup>3</sup>, while available water resources in 2020 were estimated at approximately 4,225 million m<sup>3</sup> per year from surface and groundwater resources.<sup>12</sup> These changes are reducing groundwater recharge, increasing unsustainable groundwater abstraction, and affecting the reliability and resilience of water supply systems. Renewable water availability in Lebanon has fallen well below the international water-stress threshold of 1,000 m<sup>3</sup> per capita per year: the most recent available data (2017) put Lebanon's renewable water availability at approximately 704 m<sup>3</sup> per capita per year, down from earlier estimates, as population growth, climate variability, and the influx of displaced populations have placed additional strain on available resources.<sup>13</sup>

Climate pressures are compounded by Lebanon's prolonged economic crisis, which has significantly weakened the operational and financial capacity of the four existing regional water establishments. Aging infrastructure, fragmented hydrological information, limited digitalization, insufficient real-time monitoring, and constrained institutional capacities reduce the ability of utilities to anticipate, monitor, and respond to climate-related stresses. Consequently, operational inefficiencies remain high, with NRW exceeding 50% nationally according to Lebanon's own updated National Water Sector Strategy (NWSS) 2024-2035, representing substantial losses of already scarce water resources and reducing the adaptive capacity of water systems under increasing climate variability.<sup>14</sup>

The project will be implemented in partnership with the North Lebanon Water Establishment (NLWE), serving North Lebanon and Akkar governorates, where high socio-economic vulnerability, the presence of displaced populations, and increasing climate variability place additional pressure on already constrained water services. Specific pilot facilities will be identified during the proposal development phase in consultation with the NLWE, the MoEW, and other relevant stakeholders based on climate risks, operational priorities, and opportunities for innovation.

The proposed project directly supports Lebanon's NWSS 2024-2035, which identifies climate resilience, digital transformation, improved utility performance, operational efficiency, integrated information systems, and strengthened institutional governance as priorities for modernizing the water sector.<sup>15</sup> It also contributes to the adaptation priorities of Lebanon's Nationally Determined Contribution (NDC 3.0) and National Adaptation Plan (NAP 2025–2035), both

---

<sup>10</sup> Ministry of Environment / UNDP (2022/2024), Lebanon's First Biennial Transparency Report (BTR). See also: Fourth National Communication to the UNFCCC. Historical climatological baseline analysis (1950–2020 and 1991–2020).

<sup>11</sup> PlanAdapt/UNDP/NAP Global Network (2023), [Supporting the Development of Lebanon's National Adaptation Plan Process](#). Based on climate projections from Lebanon's Second National Communication to the UNFCCC.

<sup>12</sup> Ministry of Energy and Water (MoEW), [Towards a Sustainable Water Sector: Lebanon's National Water Strategy 2024–2035](#), Table 9, “Available and exploited water resources in 2020,” p. 24.

<sup>13</sup> Fanack Water (2024), [Water Resources in Lebanon](#).

<sup>14</sup> The [Badil \(2025\), Lebanon's Water Strategy: Drowning in Promises, Thirsting for Action](#).

<sup>15</sup> Ministry of Energy and Water (2024), [Lebanon's national water sector strategy 2024–2035](#). Government of Lebanon.

launched together with the Long-Term Low Emission Development Strategy as Lebanon's "Climate Policy Package" by the Ministry of Environment (MoE), with UNDP support, in September 2025.<sup>16</sup> These frameworks recognize the need to strengthen climate-informed water management through improved climate and hydrological information, enhanced monitoring and early warning systems, digital decision-support tools, stronger institutional coordination, and inclusive adaptation planning; the NAP's water-sector targets specifically call for a 20% reduction in water losses and upgrades to water and wastewater systems by 2030.<sup>17</sup> Cross-cutting priorities on gender equality, social inclusion, and capacity development are embedded within both national frameworks as essential enablers of climate resilience.

## Project / Programme Objectives:

*List the main objectives of the project/programme.*

The overall objective of the proposed project is **to enhance the climate resilience of urban water systems** across three countries in the Arab region by reducing water losses, strengthening data-driven water management, and building institutional capacity through innovative and scalable solutions.

To achieve the overall goal, the project will pursue the following objectives to strengthen climate resilience in urban water management:

1. **Establish an enabling environment for climate-resilient water management** by creating Climate-Resilient Water Innovation Hub(s) that strengthens the technical, operational, and institutional capacities of water utilities and relevant stakeholders through multi-stakeholder collaboration, co-design, demonstration, capacity building, knowledge exchange, and the adoption of innovative adaptation solutions.
2. **Enhance the climate resilience and efficiency of urban water management systems** by promoting and deploying digital technologies, strengthening early-warning and early-detection systems, and strengthening data-driven monitoring, analysis, decision-making, and planning.
3. **Strengthen local knowledge, exchange of practices, and information sharing among targeted countries** to create a module that could be scaled up and replicated in other countries within the region.

## Project / Programme Components and Financing:

(Table 1) Project components, outcomes, outputs, and countries in which activities will be executed, and the corresponding budgets

<sup>16</sup> UNDP (2025), [Lebanon launches climate policy package to advance Paris Agreement goals and accelerate low-carbon transition](#).

<sup>17</sup> MoE Lebanon (2025), Lebanon's National Adaptation Plan (NAP): Strategy and Roadmap 2025–2035. Beirut: MoE/UNDP.

| Project Components                                                                                                                                                                                                                 | Expected Outcomes                                                                                                                                                                                                                   | Expected Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Countries              | Amount (US\$) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|
| 1. Establish Climate-Resilient Water Innovation Hub(s) (CRWIHs) in targeted countries to enhance knowledge sharing and capacities on climate outlook information, digital water utility operations, and water facility management. | <b>Outcome 1.1:</b> Strengthened national and subnational institutional capacity through inclusive stakeholder engagement to anticipate, respond to, and manage climate stresses affecting water management and operations systems. | <ul style="list-style-type: none"> <li><b>Output 1.1:</b> Climate-Resilient Water Innovation Hubs established and operational as multi-stakeholder platforms for climate and water data sharing, capacity development, demonstration of digital climate-resilient water management and utility operation solutions, including applications for Non-Revenue Water (NRW) management, and coordinated institutional actions, through gender-responsive participation and capacity development.</li> <li><b>Output 1.2:</b> Innovative climate-resilient water management technologies, digital tools, and operational approaches (including solutions for improving water distribution efficiency and NRW reduction, where relevant) are demonstrated, validated, and adapted for country-specific replication or scale-up.</li> </ul> | Egypt, Jordan, Lebanon | 1,000,000     |
| 2. Deploy digital climate stress-testing solution tools for climate-resilient water management and utility operational systems, including NRW applications to enable early warning & detection, and anticipatory action.           | <b>Outcome 2.1:</b> Impact of climate risks on water management and operational systems is detected at early stage, and climate change adaptation solutions are promoted, including for NRW management where applicable.            | <ul style="list-style-type: none"> <li><b>Output 2.1:</b> Early water stress detection and monitoring systems (including, where applicable, digital monitoring and NRW detection of water networks) installed, tested, and operational within selected pilot water facilities in participating countries to enable anticipatory action.</li> <li><b>Output 2.2:</b> Digital climate induced water stress-testing and detecting tools and decision-support systems integrated into pilot water management and operational systems in participating countries to support climate-informed operational decision-making, including improved management of NRW, where relevant.</li> </ul>                                                                                                                                               | Egypt, Jordan, Lebanon | 2,570,000     |
| 3. Knowledge development and dissemination of information on climate-resilient water management and operation systems is strengthened in the Arab region.                                                                          | <b>Outcome 3.1:</b> Enhanced regional knowledge, inclusive collaboration and capacity to replicate and scale innovative climate-resilient water management                                                                          | <ul style="list-style-type: none"> <li><b>Output 3.1:</b> Regional knowledge products, replication packages, technical guidance, and peer-learning mechanisms developed to support the replication and scaling of proven climate-resilient water management and operation innovations, including digital approaches for NRW management.</li> <li><b>Output 3.2:</b> Regional knowledge exchange platform on climate-resilient water management and operation systems established and adopted by participating institutions to facilitate regular information sharing, peer learning, dissemination</li> </ul>                                                                                                                                                                                                                       | Egypt, Jordan, Lebanon | 600,600       |

|                                                                                              |                                                 |                                                                                                   |  |           |
|----------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------|--|-----------|
|                                                                                              | and operation solutions across the Arab region. | of best practices and lessons learned, and joint problem solving through inclusive participation. |  |           |
| 4. Project/Programme activities                                                              |                                                 |                                                                                                   |  | 4,170,600 |
| 5. Project/Programme Execution cost                                                          |                                                 |                                                                                                   |  | 437,700   |
| 6. Total Project/Programme Cost                                                              |                                                 |                                                                                                   |  | 4,608,300 |
| 7. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable) |                                                 |                                                                                                   |  | 391,700   |
| <b>Amount of Financing Requested</b>                                                         |                                                 |                                                                                                   |  | 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 | Nov 2027       |
| Mid-term Review (if planned)              |                |
| Project/Programme Closing                 | Nov 2031       |
| Terminal Evaluation                       | May 2032       |

## PART II: PROJECT / PROGRAMME JUSTIFICATION

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

### Problem Statement

Urban water systems across the region are becoming increasingly vulnerable to the impacts of climate change. Rising temperatures, prolonged and more frequent droughts, changing precipitation patterns, and growing water scarcity are placing unprecedented pressure on already stressed water resources. At the same time, high levels of non-revenue water (NRW), aging distribution networks, limited climate information, digital monitoring and decision-support tools, and insufficient institutional capacity constraint the ability of utilities to anticipate and respond to climate-related stresses and provide reliable services during periods of climate stress. Existing utility operations remain largely reactive, with limited capacity for early water

stress detection, climate-informed decision-making, and adoption of innovative adaptation approaches. As climate change intensifies, these systemic and operational constraints increase the exposure and vulnerability of urban populations, particularly in water-scarce and vulnerable areas, to water shortages and service disruptions.

The desired future is one in which urban water utilities can anticipate, absorb, and respond to climate-related shocks through climate-resilient water management systems that optimize the use of increasingly scarce water resources, and maintain reliable service delivery under changing climatic conditions. Equipped with digital detecting and monitoring tools, climate-informed decision-support systems, innovative operational approaches, and strengthened institutional capacities, utilities would be able to proactively manage climate-related water stresses, enhance water security, and safeguard vulnerable communities against climate-induced water stress.

The gap between the current situation and the desired future lies in the limited adoption, demonstration, and validation of innovative climate-resilient water management technologies and approaches, inadequate technical and institutional capacity to manage climate induced water stressors, weak mechanisms for institutional and regional knowledge exchange and learning, and the absence of scalable models for replicating successful climate adaptation solutions across different contexts. NRW remains an important manifestation of these systemic inefficiencies, particularly where high water losses further constrain increasingly scarce water resources. Addressing these barriers is critical to strengthening adaptive capacity, reducing vulnerability to climate-related water scarcity, and enhancing the long-term resilience of water management and utility operation systems across the region.

### **Proposed Solution**

The proposed regional project aims to enhance the climate resilience of management and utility operation water systems in participating countries by strengthening climate-informed and data-driven water management, promoting innovative adaptation solutions, and improving institutional capacities to respond to increasing climate variability and water scarcity. To address the aforementioned gap, the project adopts an integrated approach combining innovation platforms, the demonstration and validation of innovative digital technologies and operational approaches, and institutional capacity development. Through the establishment of Climate-Resilient Water Innovation Hubs, the testing and integration of digital early-warning and early leak detection tools and monitoring technologies, and targeted training programs for utilities operators and providers and communities, the project will enable participating institutions to transition toward proactive, climate-resilient water management practices, including improved NRW management where relevant. The regional nature of the project provides added value by facilitating cross-country knowledge exchange, enabling shared learning on innovative water management approaches, and fostering the development of replicable solutions that can be adapted and scaled across different climatic, institutional, and operational contexts. Demonstrating and validating innovations across Egypt, Jordan, and Lebanon will generate comparative evidence on their effectiveness and enabling conditions, while regional technical guidance, replication packages, peer-learning mechanisms, and knowledge exchange will facilitate their wider uptake across the Arab region.

The project is structured around three interconnected components that collectively support the transition toward climate-resilient urban water management.

**Component 1: Establish Climate-Resilient Water Innovation Hub(s) (CRWIHs) in targeted countries to enhance knowledge sharing and capacities on climate outlook information, digital water utility operations, and water facility management**

The first component focuses on strengthening institutional innovation capacity and multi-stakeholder collaboration through the establishment of Climate-Resilient Water Innovation Hubs (CRWIHs) within participating water utilities. The expected outcome of this component is improved national and subnational institutional capacity to anticipate, respond to, and manage climate stresses affecting water management and operational systems, informed by sex-disaggregated data where available. To achieve this outcome, the project will establish and operationalize CRWIHs that serve as multi-stakeholder platforms for climate-induced water stressors data sharing, capacity development, demonstration of innovative digital climate-resilient water management and utility operation solutions, and coordinated institutional actions among utilities operators/providers, local authorities, research institutions, technology providers, and community stakeholders.

Activities under this component will include conducting stakeholder mapping and needs assessments to identify priority climate-related water management challenges, existing innovation initiatives, institutional roles, and capacity gaps, ensuring balanced representation of women and men and the inclusion of vulnerable and marginalized groups, including older persons and Internally Displaced People (IDPs), and establishing governance arrangements, multi-stakeholder coordination mechanisms, partnership frameworks, and data-sharing protocols, and initial capacity-building activities for participating institutions for the hubs. Through the innovation hubs, stakeholders will jointly identify priority water management challenges and assess proven climate-resilient digital technologies and operational approaches, drawing on regional and international utility experience and Water Operators' Partnerships (WOPs), for adaptation and replication in participating countries. Selected solutions, including approaches for improving water distribution efficiency and reducing NRW, where relevant, will be demonstrated, monitored, technically evaluated, and refined through technical support provided by the hubs to enable their adaptation for country-specific operational, institutional, and climatic conditions and future replication or scale-up. Lessons learned and evidence generated through the demonstration and validation of the selected innovations will inform their adaptation to country-specific contexts and provide the foundation for regional knowledge exchange and scaling under Component 3.

|                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Component 1</b> Establish Climate-Resilient Water Innovation Hub(s) (CRWIHs) in targeted countries to enhance knowledge sharing and capacities on climate outlook information, digital water utility operations, and water facility management. |                                                                                                                                                                                                                                                                                         |
| <b>Outcome 1</b> Strengthened national and subnational institutional capacity through inclusive stakeholder engagement to anticipate, respond to, and manage climate stresses affecting water management and operations systems                    |                                                                                                                                                                                                                                                                                         |
| <b>Output 1.1</b> CRWIHs established and operational as multi-stakeholder platforms for climate and water data-sharing, capacity development, demonstration of digital climate-resilient water management and utility                              | <b>Activity 1.1.1 Conduct stakeholder mapping and needs assessments</b> <ul style="list-style-type: none"> <li>Conduct national stakeholder mapping and needs assessments to identify priority climate-related water management challenges, existing innovation initiatives,</li> </ul> |

|                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operation solutions, including applications for NRW management, and coordinated institutional actions, through gender-responsive participation and capacity development.                                                                                                                                                                                          | <p>institutional roles, and capacity gaps, including gender-related barriers and opportunities.</p> <p><b>Activity 1.1.2 Establish and operationalize Innovation Hubs</b></p> <ul style="list-style-type: none"> <li>Establish and operationalize CRWIHs, including governance arrangements, multi-stakeholder coordination mechanisms, partnership frameworks, data-sharing protocols, initial capacity-building activities for participating institutions, and inclusive participation mechanisms.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Output 1.2</b> Innovative climate-resilient water management technologies, digital tools, and operational approaches (including solutions for improving water distribution efficiency and reducing NRW, where relevant) are demonstrated, validated, and adapted for country-specific replication or scale-up, through gender-responsive capacity development. | <p><b>Activity 1.2.1 Identify innovative solutions</b></p> <ul style="list-style-type: none"> <li>Identify and assess proven climate-resilient water management technologies and operational approaches, including NRW management where relevant, drawing on regional and international utility experience and Water Operators' Partnerships (WOP), for adaptation and replication in participating countries.</li> </ul> <p><b>Activity 1.2.2 Demonstrate and validate innovations</b></p> <ul style="list-style-type: none"> <li>Demonstrate and validate selected innovations through pilot applications and technical evaluations in collaboration with participating water utilities and relevant stakeholders through gender-responsive training.</li> </ul> <p><b>Activity 1.2.3 Adapt innovations</b></p> <ul style="list-style-type: none"> <li>Document pilot results and adapt demonstrated solutions for country-specific operational, institutional, and climatic conditions, including gender-responsive lessons learned.</li> </ul> |

## **Component 2: Promote and test digital climate stress-testing solutions for climate-resilient water management and utility operational systems, including NRW applications to enable early anticipatory action**

The second component focuses on improving the operational resilience of water management and operational systems through the deployment of early water stress detection and monitoring systems, digital climate stress-testing tools, and decision-support solutions. The expected outcome is the early detection of climate risks affecting water management and operational systems and the promotion of timely climate adaptation measures, including improved NRW management where applicable.

Under this component, the project will conduct baseline technical assessments of selected pilot water facilities to identify priority climate risks, monitoring requirements, existing operational systems, and opportunities for strengthening climate resilience, including reducing NRW where relevant. Based on these assessments, context-appropriate early water stress detection and monitoring systems—including sensors, Supervisory Control and Data Acquisition (SCADA) integration, monitoring equipment, and, where appropriate, technologies such as acoustic loggers, pressure sensors, flow meters, and data transmission systems—will be procured, installed, integrated, and commissioned in pilot water facilities/districts.

In parallel, digital climate stress-testing methodologies, decision-support tools, and monitoring dashboards, including hydraulic modeling where appropriate, will be developed or customized and integrated with existing utility operational data systems to enable real-time monitoring, climate-informed analysis, and anticipatory operational planning. These systems will allow

utilities to detect emerging climate-related operational stresses at an early stage, evaluate potential impacts under different climate scenarios, including drought, heat-driven demand, flooding, and supply disruption, and support evidence-based operational decisions under conditions of climate variability and increasing water scarcity, including the proactive management of water distribution systems and NRW, where applicable. The monitoring systems will be tested, calibrated, and validated under different operational and climate conditions to ensure reliable performance.

Utility personnel will receive targeted training to strengthen their capacity to apply digital climate stress-testing tools for anticipatory planning, operational decision-making, and adaptive water management, including through peer-to-peer technical support and WOPs, where appropriate. Together, these interventions will strengthen climate-informed operational decision-making, improve the resilience and efficiency of water management systems, and enhance the capacity of participating water utilities to anticipate and respond to climate-related water stresses, including reducing NRW where relevant.

|                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Component 2</b> Promote and test digital climate stress-testing solutions for climate-resilient water management and utility operational systems, including NRW applications to enable early and anticipatory action.                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Outcome 2</b> Impact of climate risks on water management and operational systems is detected at early stage, and climate change adaptation solutions are promoted, including for NRW management where applicable.                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Output 2.1</b> Early water stress detection and monitoring systems (including, where applicable, digital monitoring of water distribution networks and NRW) installed, tested, and operational within selected pilot water facilities in participating countries to enable anticipatory action.                                        | <b>Activity 2.1.1 Conduct baseline assessments</b> <ul style="list-style-type: none"> <li>Conduct baseline technical assessments of pilot facilities to identify monitoring requirements, priority climate risks, and existing operational systems, including gender-related capacity needs.</li> </ul> <b>Activity 2.1.2 Install monitoring systems</b> <ul style="list-style-type: none"> <li>Procure, install, integrate, and commission early water stress detection and monitoring systems, including sensors, SCADA integration, and monitoring equipment where appropriate.</li> </ul> <b>Activity 2.1.3 Test and calibrate systems</b> <ul style="list-style-type: none"> <li>Test, calibrate, and validate monitoring systems under different operational and climate conditions to ensure reliable performance.</li> </ul> |
| <b>Output 2.2</b> Digital climate stress-testing tools and decision-support systems integrated into pilot water management and operational systems in participating countries to support climate-informed operational decision-making, including improved management of NRW, where relevant, through gender-responsive capacity building. | <b>Activity 2.2.1 Develop or customize digital tools</b> <ul style="list-style-type: none"> <li>Develop or customize digital climate stress-testing methodologies and decision-support tools, including hydraulic modeling where appropriate, to assess water system performance under relevant climate scenarios such as drought, heat-driven demand, flooding, and supply disruption.</li> </ul> <b>Activity 2.2.2 Integrate tools and train operators</b> <ul style="list-style-type: none"> <li>Integrate digital stress-testing and decision-support tools into pilot utility operations and strengthen operator capacity for anticipatory planning and decision-making, including through peer-to-peer technical support and WOPs, where appropriate.</li> </ul>                                                               |

**Component 3: Knowledge development and dissemination of information on climate-resilient water management and operation systems is strengthened in the Arab region**

The third component focuses on developing, documenting, and disseminating knowledge to facilitate the replication and scaling of innovative climate-resilient water management and operational solutions across the Arab region. The expected outcome is enhanced regional knowledge and capacity to replicate and scale innovative climate-resilient water management and operational solutions across participating countries.

Activities under this component will focus on documenting the demonstrated innovations and lessons learned through the development of regional knowledge products, technical guidance, replication packages, case studies, and practical recommendations to support country-specific adaptation and regional scale-up. The project will also synthesize evidence on the technical, operational, institutional, and financial performance of the demonstrated solutions to identify good practices and inform future investments and replication strategies. In addition, a regional knowledge exchange platform will be established and operationalized to facilitate peer learning, technical exchanges, communities of practice, regular information sharing, and replication across participating countries. Regional workshops, technical exchange events, and collaborative learning activities, including utility-to-utility partnerships through the WOPs approach where appropriate, will provide opportunities for participating institutions to act as both learners and knowledge contributors, share experiences, discuss implementation challenges, disseminate lessons learned, and jointly identify pathways for scaling successful innovations across the Arab region. Together, these activities will strengthen regional collaboration, promote the uptake of proven climate-resilient water management innovations, and support their replication and scaling across diverse institutional and climatic contexts in the Arab region.

|                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Component 3</b> Knowledge development and dissemination of information on climate-resilient water management and operation systems is strengthened in the Arab region.                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Outcome 3</b> Enhanced regional knowledge, inclusive collaboration and capacity to replicate and scale innovative climate-resilient water management and operation solutions across the Arab region.                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Output 3.1</b> Regional knowledge products, replication packages, technical guidance, and peer-learning mechanisms developed to support the replication and scaling of proven climate-resilient water management and operation innovations, including digital approaches for NRW management, including gender-responsive good practices. | <b>Activity 3.1.1 Develop knowledge products</b> <ul style="list-style-type: none"> <li>Develop regional knowledge products, technical guidance, replication packages, and case studies documenting the demonstrated innovations, lessons learned, and recommendations for replication and scale-up, including gender-responsive good practices.</li> </ul> <b>Activity 3.1.2 Assess innovation performance</b> <ul style="list-style-type: none"> <li>Synthesize and assess the technical, operational, institutional, and financial performance of the demonstrated innovations to inform regional replication strategies and future investments, ensuring inclusive participation.</li> </ul> |
| <b>Output 3.2</b> Regional knowledge exchange platform on climate-resilient water management and operation systems established and adopted by participating institutions to facilitate regular information sharing, peer learning, dissemination of best practices and lessons learned, and                                                 | <b>Activity 3.2.1 Establish the regional platform</b> <ul style="list-style-type: none"> <li>Design, develop, and operationalize a regional knowledge exchange platform to facilitate information sharing, peer learning, and collaboration among participating institutions, ensuring inclusive participation.</li> </ul> <b>Activity 3.2.2 Organize regional exchanges</b> <ul style="list-style-type: none"> <li>Facilitate regional peer learning, technical exchanges, utility-to-utility partnerships, including through the WOP approach, to share implementation experience, jointly address operational and</li> </ul>                                                                  |

|                                                        |                                                                                                         |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| joint problem solving through inclusive participation. | climate-related challenges, and support replication of proven practices across participating countries. |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------|

Across these three components, the project seeks to promote the adoption of innovation-driven approaches within participating water utilities and relevant institutions for climate-resilient water management and operational decision-making, demonstrate and validate innovative digital technologies, operational approaches, and decision-support systems, and enhance the efficiency and climate resilience of water management and operational systems, including improved NRW management where relevant. Under the shared core activities, each participating country will implement context-specific interventions tailored to its institutional, technical, and environmental conditions, while contributing to the joint generation of evidence, technical guidance, and replication packages that will enable participating countries and other Arab States to adapt, replicate, and scale proven climate-resilient water management innovations.

**(Table 2)** Country-Specific Add-ons on core project activities

| Components                                                    | Core Activity                                                                                                                                                                                                                                                                          | Country-Specific Add-ons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Establish Climate-Resilient Water Innovation Hubs (CRWIHs) | <b>(Inception)</b><br><br>Conduct stakeholder mapping and institutional needs assessments.                                                                                                                                                                                             | <b>Egypt:</b> Damietta Governorate confirmed as pilot location; specific zone(s) to be selected during inception in coordination with DWSC, drawing on UN-Habitat Egypt's existing Hayenna gap-analysis and profiling work across Damietta's identified existing and urban expansion zones (including Al-Shoura'a).<br><b>Jordan:</b> Assessment of pilot area and hub locations based on utility readiness and priorities and to ensure hub's sustainability.<br><b>Lebanon:</b> GIS-based assessment of municipal water systems and climate-related challenges. |
|                                                               | <b>(Implementation)</b><br><br>Establish and operationalize Climate-Resilient Water Innovation Hubs.<br><br>Deliver initial capacity-building activities for participating institutions.<br><br>Demonstrate and adapt innovative digital climate-resilient water management solutions. | <b>Egypt:</b> Digital design and monitoring layer (GIS design data, sensors, smart metering) integrated into new and/or rehabilitated water and wastewater network in the selected zone(s), coordinated with DWSC's and the government's capital investment plan for any physical network works.<br><b>Lebanon:</b> Possible hosting by a university to ensure long-term sustainability. Training including civil society organizations and water-focused NGOs.                                                                                                   |
|                                                               | <b>(Knowledge Dissemination)</b><br><br>Document demonstrated innovations and contribute lessons learned for regional replication.                                                                                                                                                     | <b>Egypt:</b> Peer exchange among HCWW subsidiaries; lessons shared across Damietta's other identified urban expansion zones.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 2. Pilot Digital Climate Stress-Testing Solutions             | <b>(Inception)</b><br><br>Conduct baseline technical assessments of pilot water facilities.                                                                                                                                                                                            | <b>Lebanon &amp; Jordan:</b> Selection of pilot District Metered Areas (DMAs).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                               |                                                                                                                                                                                                                                                                                        |                                                                                                                                                         |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                               | <b>(Implementation)</b><br>Install and operationalize early water stress detection and monitoring systems.<br><br>Integrate digital climate stress-testing and decision-support tools into pilot utility operations.<br><br>Train utility personnel on the use of the digital systems. | <b>Jordan:</b> Study the post-completion and handover feasibility, specifically the maintenance and operation to ensure sustainability and scalability. |
|                                               | <b>(Knowledge Dissemination)</b><br>Document pilot implementation results and operational lessons to support replication and scaling.                                                                                                                                                  | No country add-ons                                                                                                                                      |
| 3. Regional Knowledge Development and Scaling | <b>(Inception)</b><br>Identify knowledge needs and establish regional collaboration mechanisms.                                                                                                                                                                                        | No country add-ons                                                                                                                                      |
|                                               | <b>(Implementation)</b><br>Develop regional knowledge products, technical guidance, and replication packages.<br><br>Establish and operationalize the regional knowledge exchange platform.                                                                                            | <b>Lebanon:</b> Renewable energy retrofits for pumping stations to enhance resilience.                                                                  |
|                                               | <b>(Knowledge Dissemination)</b><br>Organize regional peer-learning and knowledge-sharing activities to promote replication and scaling.                                                                                                                                               | No country add-ons                                                                                                                                      |

The regional nature of the project provides significant added value beyond what could be achieved through isolated national interventions. By bringing together three countries facing similar climate-related water challenges but operating under different institutional, operational, and environmental conditions, the project will jointly develop, demonstrate, and validate a common framework for digital climate-resilient water management. While each participating country will implement context-specific pilot interventions, all will apply a shared innovation approach, generating comparable evidence on the effectiveness, adaptability, and scalability of digital climate stress-testing, early water stress detection, and decision-support solutions. This collaborative approach enables Egypt, Jordan, and Lebanon to collectively refine methodologies, validate innovations across diverse contexts, and accelerate their adaptation and uptake.

The project will also generate regional public goods, including technical guidance, replication packages, operational tools, and knowledge products, that will enable the participating

countries and other Arab States to adopt, adapt, and scale proven innovations without duplicating technical development efforts. By pooling expertise, harmonizing approaches, and embedding continuous peer learning through the CRWIHs and the regional knowledge exchange platform, the project will strengthen regional cooperation, reduce the costs and risks associated with innovation, and maximize the long-term impact and sustainability of Adaptation Fund investments across the Arab region.

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

The project introduces a comprehensive approach to innovation that combines technological, operational, and institutional dimensions to strengthen climate resilience in water management and utility operations. Technologically, it promotes the adoption of digital monitoring systems, including sensors, acoustic leak detection devices, and GIS-integrated platforms, enabling real-time analysis, early water stress detection, climate-informed decision-making, and predictive maintenance. Operationally, it supports a transition from reactive to anticipatory and climate-informed water management, allowing utilities to prioritize interventions based on climate risk and system performance, and climate outlook information. Institutionally, it introduces Climate-Resilient Water Innovation Hubs (CRWIH) as an innovative collaborative mechanism, fostering collaboration, gender-responsive and inclusive participation, among stakeholders and promoting inclusive and participatory approaches to water management. The project further promotes innovation by testing and adapting context-specific solutions that can be replicated and scaled across different climatic, institutional, and operational settings. By integrating these dimensions within a regional framework, the project creates scalable and replicable models for climate-resilient urban water systems and strengthens Arab States regional knowledge exchange on innovative climate adaptation approaches.

**Egypt**

In Egypt, innovation is introduced by ensuring that urban water infrastructure in Damietta, whether rehabilitated on the existing network or in newly built to serve the governorate's expanding urban footprint, is climate-resilient and digitally managed.

**Technological Innovation:** Within the zone(s) selected in coordination with DWSC, the project will embed GIS-integrated design, pressure and flow sensors, acoustic sensors, and smart metering into the network, alongside AI-enabled predictive analytics that allow DWSC to identify pressure anomalies and leakages and prioritize maintenance before failures occur. Where this involves newly built network in an expansion zone, as it would be in Al-Shoura'a, where a 2024 assessment found roughly 98% of the planned expansion footprint currently unserved, this means designing in monitoring from the start in addition to existing networks.

**Operational Innovation:** The intervention shifts DWSC from responding to leaks and complaints after the fact to planning maintenance around real-time network data, prioritizing both rehabilitation of aging segments in the existing network and, where relevant, proactive design of new network in growth areas.

**Systemic Innovation:** Digital design and monitoring data will be integrated into DWSC's existing utility data systems, creating a single GIS-referenced record of network condition that does not currently exist for large parts of the network, closing a substantial data gap identified in DWSC's own technical assessments, which challenges their resilience against climate impacts.

**Governance Innovation:** The Climate-Resilient Water Innovation Hub will be established in coordination with UN-Habitat Egypt's ongoing Hayenna Integrated Urban Development Project, planned to be extended to 2030, which already convenes DWSC, Damietta Governorate, and local communities around planned, non-informal urban growth. The Hub extends this existing platform to climate-resilient water management specifically, linking DWSC engineers, governorate planners, and community representatives across whichever zone(s) are confirmed.

**Scalability and Resilience:** Whatever combination of rehabilitation and new-build the pilot ends up covering, the approach, including digital monitoring including both designed as well as added on, offers a replicable model across Damietta's other identified urban expansion zones and for HCWW's affiliated companies managing comparable urban growth and climate pressure and elsewhere across Egypt's 27 governorates.

## **Jordan**

In Jordan, innovation is introduced by transforming urban water loss management from a reactive response approach into a proactive, climate-informed, and data-driven utility management model. The project addresses Jordan's increasing water stress by improving the ability of water utilities to monitor networks, identify losses, prioritize interventions, and optimize the use of limited water resources under growing climate pressures.

**Technological Innovation:** The project introduces advanced leak detection technologies, including leak noise loggers and integrated ICT-based monitoring systems, to shift from complaint-based leak identification toward continuous, data-driven diagnostics. The integration of network monitoring data, GIS-based platforms, and digital decision-support tools will enable utilities to identify high-risk areas, improve leak localization, and support more efficient management of NRW.

**Operational Innovation:** The intervention replaces reactive maintenance practices with a proactive, data-driven maintenance model. By integrating real-time network information into operational planning, Aqaba Water Company (AWC) and relevant water sector institutions will be better equipped to prioritize maintenance activities, optimize resources, and improve service reliability under increasing climate-induced water stress.

**Systemic Innovation:** The project promotes the integration of digital monitoring tools into existing utility data systems, creating interoperable platforms that connect field sensors, valve actuators, ICT-based monitoring, and operational decision-making. This strengthens coordination across engineering, planning, and management functions within WAJ, AW, and municipal entities, also this support evidence-based water resource management in line with Jordan's national priorities for NRW reduction and digital transformation.

**Governance Innovation:** The Climate-Resilient Water Innovation Hub will establish a collaborative mechanism bringing together MWI, WAJ, AWC, technology providers, academia, and relevant stakeholders to identify, test, and adapt innovative solutions for climate-resilient water management. The Hub will support knowledge exchange, institutional learning, and collaborative problem-solving, moving beyond standalone technology deployment toward sustainable innovation pathways within the water sector.

**Scalability and Resilience:** The approach is designed as a replicable model across Jordan's water utilities and municipalities. By documenting lessons learned, sharing knowledge products, and embedding technical tools within institutional processes rather than operating as standalone pilots, the intervention enhances the resilience of existing infrastructure and creates pathways for scale-up across Jordan and the wider Arab region.

## **Lebanon**

**Technological Innovation:** The project introduces innovative digital monitoring and climate-informed decision-support approaches adapted to the operational context of the NLWE. By integrating GIS, real-time monitoring technologies, and operational data, the project will demonstrate innovative approaches that strengthen utilities' ability to detect early water stresses, anticipate system failures, and improve operational resilience under increasing climate variability. Applications to improve NRW management will be demonstrated where relevant as part of broader climate-resilient utility operations.

**Operational Innovation:** Lebanon's water utilities continue to operate largely through reactive interventions due to constrained financial resources, aging infrastructure, intermittent electricity supply, and limited access to real-time operational information. The project introduces a climate-informed operational approach that enables the NLWE to progressively integrate climate information, digital monitoring, and system performance data into routine operational planning, strengthening the utility's capacity to anticipate and respond to climate-related stresses while improving service reliability and operational efficiency.

**Systemic Innovation:** One of the key barriers identified in Lebanon's NAP and the updated NWSS is the fragmented use of climate, hydrological, and operational information across institutions. The project addresses this gap by supporting the integration of climate and operational data into utility management processes, strengthening evidence-based decision-making and improving coordination between the NLWE, the MoWE, and other relevant stakeholders. This contributes to building a more climate-responsive and digitally enabled water sector.

**Governance Innovation:** The project establishes Lebanon's CRWIH as a collaborative platform that brings together the NLWE, national institutions, academia, municipalities, the private sector, and development partners to jointly identify, demonstrate, validate, and disseminate innovative solutions for climate-resilient water management. The Hub introduces a new mechanism for translating climate information, operational experience, and technical innovation into institutional learning, while promoting gender-responsive participation and strengthening collaboration across the water sector.

**Scalability and Resilience:** The project adopts a demonstration-based approach that enables innovative climate adaptation solutions to be tested and refined under Lebanon's institutional and climatic conditions before wider replication. By combining technical guidance, institutional capacity development, and knowledge sharing, the project will generate practical evidence that supports the implementation of the NWSS 2024-2035, the NDC 3.0, and the NAP 2025-2035, while providing scalable approaches that can be replicated by other regional water establishments across Lebanon and shared through the regional programme.

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

The project will scale successful innovative climate adaptation practices, tools, technologies, and institutional mechanisms through complementary horizontal and vertical scaling pathways. It builds on innovations demonstrated and validated under the project, including innovative technologies, climate-informed decision-support tools, operational approaches, and institutional mechanisms, and combines Climate-Resilient Water Innovation Hubs (CRWIHs), technical guidance, replication packages, and regional knowledge exchange. Rather than demonstrating

isolated technologies or approaches, the project seeks to institutionalize a collaborative innovation process that enables participating institutions to identify, demonstrate, validate, adapt, and replicate climate-resilient water management and utility operation solutions suited to their national and local contexts. The participating countries provide diverse hydro-climatic, socio-economic, institutional, and operational contexts in which these approaches will be adapted and demonstrated and validated. This diversity will generate context-specific evidence, lessons learned, and good practices on the conditions required for successful implementation and provide a robust basis for replication across the Arab region. Gender-responsive good practices and lessons learned will be integrated into technical guidance, replication packages, and knowledge products to support the inclusive scaling of successful adaptation solutions.

### **Horizontal & vertical scaling**

The project will facilitate replication across utilities, institutions, and countries through a structured regional learning framework. CRWIHs will support collaboration among participating water institutions and stakeholders, enabling them to exchange operational experience, jointly address implementation challenges, and refine innovative adaptation approaches based on local conditions. Technical guidance, training materials, replication packages, and knowledge products developed through the project will be consolidated and shared through the regional knowledge exchange platform that can be adapted by other utilities facing similar climate risks. These products will integrate gender-responsive good practices and lessons learned to promote inclusive adaptation. Regional partnerships and peer-to-peer learning will further promote the uptake of effective approaches to climate-resilient water management and utility operations, including NRW management where relevant, beyond the initial project locations.

Scaling will also be achieved by integrating innovative climate-resilient water management approaches, digital technologies, and decision-support tools into the routine functions of participating utilities. Demonstrated innovations will become part of existing operational, asset management, and planning processes rather than remaining project-specific interventions. Capacity development will equip utility staff with the technical and managerial competencies needed to adopt, operate, adapt, and sustain these innovations, while implementation experience will inform future planning, investment decisions, and institutional strengthening efforts practices related to climate adaptation and digital transformation.

### **Building the evidence base for scaling**

A structured monitoring and learning process will accompany implementation to demonstrate the effectiveness of the proposed approach and support wider adoption. Baseline assessments, performance monitoring, implementation reviews, and lessons learned will be systematically documented across participating countries. These experiences will inform technical guidance, case studies, and practical replication packages that identify successful adaptation approaches, enabling conditions, and implementation challenges, providing a strong evidence base for future replication.

### **Sustainability at scale**

The project is designed to achieve long-term sustainability through institutional ownership rather than continued external financing. Innovative approaches, institutional capacities, governance

mechanisms, and knowledge products will be integrated into participating institutions' regular planning, capacity development, budgeting, and maintenance processes. The CRWIHs and regional knowledge exchange platform will provide sustained mechanisms for participating institutions to continue identifying, adapting, validating, and replicating innovative climate adaptation solutions beyond the project lifetime, supporting the implementation of national adaptation priorities and strengthening long-term resilience of the water sector.

### **Country-specific scaling pathways**

**Egypt** will demonstrate how digital water management can be embedded within the instructional framework of the Holding Company for Water and Wastewater (HCWW), creating a model that can be replicated across its affiliated utilities in the 27 governorates. **Jordan** will contribute its extensive experience in NRW management and digital utility operations, serving as a regional source of practical knowledge and operational good practice for peer learning. The approach will also provide a replicable model for application across Jordan's water utilities and contribute practical lessons for regional knowledge exchange and peer learning. **Lebanon** will demonstrate how innovative climate-resilient water management approaches can strengthen institutional coordination, climate-informed decision-making, and utility operations, providing a replicable model for water establishments operating in fragmented institutional settings. Together, these complementary experiences will establish a regional innovation model that combines proven technologies, strengthened institutional capacity, and operational learning. By generating evidence across diverse country contexts and embedding successful practices within utility operations, the project will create a strong foundation for continued replication and long-term climate resilience across the Arab region.

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

Across the participating countries, the project will generate environmental, social, and economic benefits by strengthening the climate resilience of water management and utility operations. Through climate-informed monitoring, digital stress-testing, decision-support tools, and context-appropriate operational approaches, the project will enable water utilities to better anticipate and respond to increasing water scarcity, drought, rainfall variability, extreme temperatures, and other locally relevant climate stresses. These interventions are expected to improve the sustainable use of water resources, operational efficiency, and the reliability and resilience of water services.

The resulting adaptation benefits will particularly support climate-vulnerable and underserved communities that have limited capacity to cope with water insecurity and service disruptions. Gender-responsive and inclusive participation will be promoted throughout project implementation, with particular attention to women, youth, displaced populations, persons with disabilities, older persons, and other vulnerable groups, as relevant to each country context. Potential environmental and social risks will be screened and managed in accordance with national requirements and the Adaptation Fund's Environmental and Social Policy and Gender

Policy. Country-specific environmental, social, and economic benefits and associated risk mitigation measures are described below.

## **Egypt**

### **Environmental and Climate Adaptation Benefits**

Damietta Governorate, located at the mouth of the Damietta branch of the Nile on the Mediterranean coast, faces seawater intrusion due to sea-level rise affecting groundwater quality and upstream pollution loading. Climate-resilient network management and reduced water losses will ease pressure on water treatment plants already operating near their combined design capacity of roughly 146,880 m<sup>3</sup>/day, as well as the El-Ananiya wastewater treatment plant, which is currently receiving about a third more flow than its 90,000 m<sup>3</sup>/day design capacity before discharging into Lake Manzala, an ecologically significant coastal wetland. In Damietta's urban expansion zones such as Al-Shoura'a, where an estimated 98% of the planned expansion footprint lacks water and wastewater networks, extending metered and monitored services can also reduce reliance on unregulated groundwater abstraction and self-built connections.

### **Social Benefits and Support to Vulnerable Groups**

Damietta's urban expansion zones include economically active but currently underserved communities. Al-Shoura'a, one of Damietta's four priority expansion zones and one of its main furniture-manufacturing hubs, is characterized by mixed residential-workshop use, consistent with roughly 83% of housing land across Damietta (GOPP, 2017). Since 2020, economic shocks have affected local employment, with women's unemployment reaching almost 50% in 2020 and many women subsequently entering low-paid and precarious work. More reliable water and sanitation services can reduce pressures on vulnerable households and local businesses. UN-Habitat Egypt's existing Hayenna socioeconomic profiling, including dedicated focus groups with women and youth in Al-Shoura'a, provides a methodology the project can extend to other candidate zones during inception, and an established channel for women's and youth participation in Hub governance and monitoring roles, in line with the project's cross-cutting Gender Action Plan.

### **Economic Benefits**

For DWSC, embedding monitoring into network works as they are extended or rehabilitated reduces the operational cost of correcting undocumented or substandard connections after the fact, and avoids the higher long-term cost of retrofitting network built without climate-resilient design. This is a gap already documented in parts of Damietta's system, including Al-Shoura'a. For households and businesses in the zone(s) eventually selected, reliable metered service reduces exposure to the cost and disruption of unplanned outages; in Al-Shoura'a specifically, this would also support the governorate's own strategic goal of raising the competitiveness of the furniture sector, which anchors the area's economy despite its recent contraction.

### **Environmental and Social Risk Mitigation**

Depending on the zone(s) confirmed, the Egypt pilot may involve working in tandem with governments advancement in the construction of new distribution and collection network in

currently unserved expansion areas, rather than only retrofitting existing infrastructure. This is particularly in Al-Shoura'a, where the 2024 gap analysis found roughly 98% of the planned expansion footprint with no water network and no wastewater network at all. Where new network works are involved, risks associated with excavation, access disruption, and mixed residential/workshop areas will be managed through phased implementation aligned with DWSC's and GOPP's area plans, coordination with the Hayenna project's land-use planning work, advance notification and consultation with affected residents and businesses, and compliance with the Egyptian environmental and labour regulations already listed in the technical standards section.

## **Jordan**

### **Environmental and Climate Adaptation Benefits**

The project reduces climate-related water losses in urban distribution networks through advanced leak detection technologies, including leak noise loggers and related digital tools, deployed in selected pilot areas in collaboration with Aqaba Water Company (AWC) to strengthen targeted and effective NRW management. As rainfall becomes increasingly irregular and droughts are more frequent and severe, every cubic meter saved through leakage reduction translates directly into greater water availability for households, agriculture, and economic activity. This reduces pressure on already overstretched water sources and strengthens the climate resilience of urban water networks, by improving utilities' ability to manage climate-induced water scarcity.

### **Social Benefits and Support to Vulnerable Groups**

Women and vulnerable groups are particularly vulnerable to the impacts of water insecurity and service disruptions. In many Jordanian households, women play an important role in managing household water needs and are often more affected by unreliable water supply and service interruptions. By improving the continuity and equity of water distribution, this project reduces the burden placed on women in managing household water needs. Urban Innovation Hubs will foster cross-sectoral collaboration among WAJ, Aqaba Water Company, municipalities, communities, and technical actors, ensuring inclusive engagement by actively involving women, local community representatives, and representatives of refugee and low-income populations in the design and refinement of solutions. Deployment of technologies will be prioritized in pilot areas identified through climate vulnerability, operational needs, and water sector priorities. On another note, in Jordan, while women are increasingly represented in the water sector, further efforts are needed to strengthen their participation in technical and decision-making roles. MWI has incorporated specific gender targets under its Gender Mainstreaming Policy in the Jordanian Water Sector, in line with the FAO gender study<sup>18</sup>, which aligns with this project's objectives.

### **Economic Benefits**

By improving network efficiency and reducing water losses, the project enhances the operational performance of Jordan's water utilities and supports their long-term climate

---

<sup>18</sup> Gender Mainstreaming Policy in the Jordanian Water Sector. | FAOLEX

adaptation. Reducing water losses through targeted leak detection reduces operational pressures on utilities, lowers costs associated with unaccounted-for water and emergency interventions, and may reduce household expenditure on alternative water sources where applicable. These efficiency gains strengthen the financial sustainability of utilities over time, supporting reinvestment in service continuity and further climate resilience measures.

### **Environmental and Social Risk Mitigation**

While the project is primarily designed to deliver environmental and social benefits, potential risks have been identified and will be carefully managed. Construction and installation activities may cause temporary disruption to water supply or community access, which will be minimized through advanced community notification, phased implementation, and coordination with local municipalities. Any civil works will be conducted in compliance with national environmental regulations to avoid soil disturbance or disruption to existing infrastructure, and all interventions will adhere to Jordan's national regulations and the Adaptation Fund's Environmental and Social Policy, ensuring that potential risks are identified and appropriately mitigated.

## **Lebanon**

### **Environmental and Climate Adaptation Benefits**

The project will strengthen NLWE's capacity to anticipate and respond to climate-related water stress through improved monitoring, climate-informed decision-making, and demonstration of innovative water management approaches. This will support more adaptive management of increasingly constrained water resources under declining rainfall, reduced recharge, rising temperatures, and greater hydrological variability. Where relevant, improved distribution efficiency and NRW management can reduce avoidable losses of scarce water resources, while demonstrated solutions can inform wider replication across Lebanon.

### **Social Benefits and Support to Vulnerable Groups**

Akkar and North Lebanon include vulnerable Lebanese and displaced communities with limited capacity to cope with climate-induced water insecurity. Strengthening climate-informed utility management can contribute to more responsive and equitable water services, particularly for communities with limited coping capacity. Women and vulnerable groups may experience differentiated impacts from water insecurity and barriers to participation. Gender-responsive stakeholder assessments, capacity development, Hub activities, and knowledge sharing will promote their equitable and meaningful participation.

### **Economic Benefits**

In the context of Lebanon's economic crisis and constrained utility resources, improved monitoring and climate-informed decision-making can help NLWE better prioritize interventions and use limited operational resources. Where relevant, improved NRW management can further contribute to operational efficiency, while demonstrated innovations can inform future utility planning and investment.

### **Environmental and Social Risk Mitigation**

Given the project's focus on capacity development, digital solutions, and limited pilot demonstrations within existing systems, significant environmental and social impacts are not anticipated. Specific pilot interventions will be screened during full proposal development in accordance with the Adaptation Fund Environmental and Social Policy and Gender Policy. No major civil works, land acquisition, or involuntary resettlement are currently envisaged. Potential risks related to equipment installation, occupational safety, data management, stakeholder participation, and temporary operational disruption will be mitigated through appropriate safeguards, inclusive consultation, and accessible grievance mechanisms.

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

The proposed project adopts a highly cost-effective approach to climate change adaptation by strengthening climate-informed water management through digital innovation, early water stress detection, climate stress-testing, and decision-support systems. By improving the ability of water utilities to anticipate, monitor, and respond to climate-related risks, the project enhances the performance and resilience of existing water management and operational systems without relying on major infrastructure expansion. Where relevant, improved management of NRW will further contribute to increasing water availability and operational efficiency.

Compared to conventional supply-side interventions, such as the construction of new treatment plants, desalination facilities, or large-scale water transfer systems, the project's focus on optimizing the operation and management of existing water systems through digital technologies and institutional innovation requires substantially lower capital investment while delivering rapid and measurable gains. By deploying early water stress detection and monitoring systems, digital climate stress-testing tools, and decision-support systems, the project enables utilities to anticipate climate-related operational risks, improve planning and operational decision-making, and implement timely adaptation measures, thereby reducing operational costs associated with service disruptions, inefficient water and energy use, emergency interventions, and, where applicable, NRW.

The regional design of the project further enhances cost-effectiveness by enabling the joint development, demonstration, validation, and scaling of a common framework for digital climate-resilient water management across participating countries. Applying a shared innovation approach across diverse institutional and climatic contexts generates comparable evidence on the effectiveness and adaptability of the demonstrated solutions, reducing the need for countries to independently develop and test similar innovations. By pooling technical expertise and institutional knowledge across participating countries, the project creates regional public goods, including technical guidance, replication packages, operational tools, and knowledge products, that can be adopted and adapted by participating countries and the wider Arab region, thereby reducing duplication, accelerating replication, and increasing the return on investment of Adaptation Fund resources.

**F. Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub-national development plans, poverty reduction strategies, national communications, or**

**national adaptation programs of action, or other relevant instruments, where they exist. If applicable, please refer to relevant regional plans and strategies where they exist.**

Across the Arab region, several regional strategies provide a strong policy framework for addressing water scarcity, improving water management, and strengthening climate resilience. The **Arab Strategy for Water Security in the Arab Region (ASWS)** serves as the principal regional framework guiding collective action to promote sustainable water uses and enhance water security across Arab states. It establishes a shared regional vision and strategic priorities, including strengthening institutional capacity, promoting innovation in urban water management, deploying advanced technologies for leakage detection and monitoring, and improving resilience of water systems to climate variability.

Complementing this framework, the **Arab Initiative for Mobilizing Climate Finance for Water** supports the implementation of the ASWS by facilitating access to climate finance for water-related adaptation actions at regional, national, and watershed levels. In addition, the **Arab Strategy on Water Security in the Arab Region – Meeting the Future Challenges and Needs of Sustainable Development (2010-2030)** developed by the Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD) provides guidance for integrating climate considerations into national water policies and integrated water resources management planning.

The proposed project builds on these regional frameworks by translating their strategic priorities into practical and scalable solutions for urban water systems. By introducing innovative technologies, strengthening institutional capacity, and facilitating regional knowledge exchange, the project contributes to advancing regional water security objectives while enhancing climate resilience across participating countries. To ensure effective implementation and strong political ownership, the project will also align with national climate change strategies, water sector policies, and urban resilience frameworks in each participating country, as described below.

- **Egypt:** Egypt has a strong institutional framework for water utilities under the Holding Company for Water and Wastewater (HCWW), and national strategies prioritize reducing water losses and enhancing infrastructure resilience. The **National Water Resources Plan (2017–2037)** outlines a comprehensive vision for sustainable water resource management, emphasizing efficiency, pollution control, and non-conventional water resources. The **National Climate Change Strategy (2050)** and **Egypt Vision 2030** provide a clear mandate for climate adaptation infrastructure modernization, and resource efficiency. The project is consistent with **Egypt's Nationally Determined Contribution (NDC)**, which prioritizes strengthening water sector resilience under climate change. Implementation will be aligned with national technical standards governing water utilities and environmental protection regulations, and activities will comply with applicable environmental and social assessment requirements. Existing partnerships between UN-Habitat and water authorities provide coordination opportunities for scaling up successful leak detection interventions and strengthening adaptive capacity within the sector. Furthermore, project activities are aligned to identified priorities in the **National Adaptation Plan** under development, for which UN-Habitat representation is availed in the advisory board. Implementation will also build directly on UN-Habitat's existing Hayenna Integrated Urban Development Project in Damietta, which has already established technical and planning coordination with DWSC and the Damietta Governorate.

- **Jordan:** This project aligns with **1) Economic Modernization Vision of Jordan's water management initiative** optimizing the utilization of Jordan's natural resources, specifically water, **2) Green Growth National Action Plan 2021-2025** for the water sector, supporting sustainable urban water supply augmentation, **3) National Water Strategy 2023-2040**, Pillar Goal 2, through restoring the balance between available and sustainable water supplies, essential for achieving lasting water security while meeting health and economic development needs, and **4) National Climate Change Policy (2022-2050)** through improving infrastructure and water management to reduce climate impacts.
- **Lebanon:** Lebanon has an established legal and policy framework governing the water sector through the **Regional Water Establishments (Law 221/2000)**, the **Water Code (Law 77/2018)**, and **updated National Water Sector Strategy (NWSS 2024–2035)**, which prioritizes improved utility performance, water-use efficiency and NRW reduction, digital transformation, strengthened governance, and climate-resilient water management. Lebanon has ratified the Paris Agreement and adopted its **National Adaptation Plan (NAP 2025–2035)**, which emphasizes strengthening climate resilience, climate information and monitoring, institutional capacities, and adaptation to increasing water stress. Furthermore, Lebanon's **updated Nationally Determined Contribution (NDC 3.0, 2025)** further identifies water as a key adaptation priority and promotes more climate-resilient and sustainable water management. Together, these frameworks emphasize integrated water resource management, improved monitoring and decision-making, groundwater protection, institutional strengthening, and improved resilience of water systems under increasing climate stress. The project supports these priorities by strengthening climate-informed water management and utility operations, promoting innovative digital and institutional approaches, and demonstrating scalable adaptation solutions, including improved NRW management where relevant.

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

In addition to the Adaptation Fund's ESP and UN-Habitat's ESSS, the project will comply with the applicable national technical, environmental, and labour standards in each participating country.

**Egypt:** Environmental Law No. 4 of 1994 (as amended by Law No. 9 of 2009 and Law No. 105 of 2015), the Egyptian Code for Public Water Supply and Sanitation Networks and HCWW's internal technical standards for network rehabilitation and equipment installation. Labour aspects will comply with Egyptian Labour Law No. 12/2003, including OHS provisions for field personnel.

**Jordan:** Environmental Protection Law No. 6/2017, Environmental Impact Assessment Regulation No. 37/2005 and amendments, Water Authority Law No. 18/1988 and amendments, Public Health Law No. 47/2008, National Water Strategy 2023–2040, National Climate Change Policy 2022–2050, National Adaptation Plan (NAP) 2021–2030, Jordan NDC 3.0 - Water Demand Management Policy.

**Lebanon:** Law 444/2002: Environmental protection, Initial Environmental examination (IEE) decree 8633/2012, Decree 8213/2012: SEA of policy, plan and program proposals in the public

sector, Decree 8471/2012: Environmental compliance of establishments, Decree 8633/2012: Fundamentals of EIA.

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

The participating countries have benefited from several normative, operational, and research initiatives related to climate-resilient water management, utility operations, digital water management, and NRW reduction. Notably, Jordan's ongoing NRW programme provides relevant experience and proven practices with potential for adaptation, replication, and scale-up, while Lebanon and Egypt have implemented related operational or research initiatives. The proposed regional project will build on these existing experiences and proven approaches, adapting them to different climate risks, institutional conditions, and utility needs across participating countries. The table below summarizes the initiatives identified through desk research, their complementarity with the proposed project, and areas for further investigation.

(Table 3) Initial desk research on similar projects and potential duplication

| Relevant Project/Program me and focus                                                                                                                                                                                                                                                                                             | Relevant focus and interventions / activities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Complimentary potential and non-duplication                                                                                                                                                                                                                                          | Next Steps of Investigation                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Jordan</b>                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                         |
| <p>Non-Revenue Water Reduction Program (2015-2029)</p> <p><b>Implementers:</b><br/>Ministry of Water &amp; Irrigation, Water Authority of Jordan, Miyahuna, Yarmouk Water Company, Aqaba Water Company, USAID</p> <p><a href="#">Reference 1</a><br/><a href="#">Reference 2</a><br/><a href="#">Reference 3 (Aqaba data)</a></p> | <p>This programme is the largest ongoing NRW program in Jordan. It covers the whole country; multiple governorates and utilities providers. The project is implemented on four phases and works with four main utility providers based on their mandated area; Yarmouk Water Company covering the northern area, Miyahuna the middle, Aqaba Water Company the south, as well as Jordan Wadi Authority on their jurisdiction. In addition to the listed below NRW digital technologies, this project works, as well, on house hold level to reduce/eliminate water leakages, hence reducing the NRW.</p> <p><b>Digital technologies</b></p> <ul style="list-style-type: none"> <li>• SCADA-based monitoring and control systems.</li> <li>• Advanced leak-detection equipment and vehicles.</li> <li>• Meter replacement and smart measurement improvements.</li> <li>• Data-management and operational monitoring systems.</li> </ul> | <p><u>Complementarity:</u></p> <p>Successful scalable model that can be replicated in other municipalities and countries</p> <p><u>Non-duplication:</u></p> <p>This regional project will be scaling up and replicating in other municipalities and countries in the Arab region</p> | <p>Meeting with the Ministry of Water and Irrigation to understand the scope of the NRW Reduction program, as well as lessons learnt from it, and agree on implementation areas that complements it</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>IT infrastructure upgrades supporting NRW analytics.</li> <li>Pressure-management and district-level network monitoring.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                |
| <b>Egypt</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                |
| <p>A model-based approach for leak detection in water distribution networks based on optimisation and GIS applications</p> <p>(<a href="#">Reference</a>)</p>                                                                                                                                                                                                                                                                                                          | <p>Operational/research-to-practice application (collaboration between university researchers and water company operator researchers)</p> <p><b>Digital technologies</b></p> <ul style="list-style-type: none"> <li>GIS-integrated leak detection.</li> <li>EPANET hydraulic modelling.</li> <li>Genetic-algorithm optimization.</li> <li>Meter anomaly detection.</li> <li>Physical and apparent loss analytics.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p><u>Complementarity:</u></p> <p>The developed model for pipe network calibration and quantifying leaks could be adopted by this project but further investigation is needed</p> <p><u>Non-duplication:</u></p> <p>Research area is in Alexandria while this project will be implemented in Damietta (different governorate)</p>                                                                                                                   | <p>Taking the research paper into consideration when discussing with the Holding Company for Water &amp; Wastewater (Egypt) as well as with the executing entity in charge of developing the leak detection model for the regional project</p> |
| <b>Lebanon</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                |
| <p>Sustainable Management of NRW Project</p> <ul style="list-style-type: none"> <li>Project title: Promoting Sustainable Management of Water Services and Resources in Countries Affected by the Syrian Crisis (MiyahCon)</li> <li>Project Donor: European Commission</li> <li>Partners: GVC, CISP, ACWUA, in coordination with the Beqaa Water Establishment (BWE), South Lebanon Water Establishment (SLWE), and North Lebanon Water Establishment (NLWE)</li> </ul> | <p><b>Project scope of work:</b></p> <ol style="list-style-type: none"> <li>Reverse mapping: Field validation and GIS-based digitization of existing water networks</li> <li>Hydraulic modelling and operation <ul style="list-style-type: none"> <li>Network simulation to support pressure zoning and operational planning</li> </ul> </li> <li>Water accounting: <ul style="list-style-type: none"> <li>NRW assessment using standard toolbox indicators</li> <li>Performance Improvement Plans (PIP), with coaching on implementation</li> </ul> </li> <li>Digital technologies <ul style="list-style-type: none"> <li>GIS database development and updating.</li> <li>Hydraulic modelling.</li> <li>SCADA/GIS integration procedures.</li> <li>Water accounting analytics.</li> <li>Standard operating procedures for NRW management</li> </ul> </li> <li>Institutional Capacity Building <ul style="list-style-type: none"> <li>Support for the establishment of dedicated NRW and GIS units within water establishments</li> </ul> </li> </ol> | <p><u>Complementarity:</u></p> <p>The used techniques could be examined and adopted by this project if useful.</p> <p><u>Non-duplication:</u></p> <p>Different geographic location</p> <p>Municipalities of Qatalbah and Bsatine (Akkar – North Lebanon), El Fouar and Majdalaia (Zgharta District – North Lebanon), Labwe, Ain, Nabi Osmane, Zabboud, Bejjeje, Moqraq, Noqra, Bezalie and Khoder (North Bekaa), and Bint Jbeil (South Lebanon)</p> | <p>Further investigation is needed.</p>                                                                                                                                                                                                        |

|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <ul style="list-style-type: none"> <li>- Duration: 2016-2021</li> <li>(<a href="#">Reference 1</a>)</li> <li>(<a href="#">Reference 2</a>)</li> </ul> | <ul style="list-style-type: none"> <li>- Support to commercial operations (meter tracking, KPI dashboards)</li> <li>6. Field implementation :               <ul style="list-style-type: none"> <li>- DMA isolation and monitoring.</li> <li>- Ground microphones and listening-stick leak detection.</li> <li>- Pressure monitoring.</li> <li>- Water balance calculations.</li> <li>- GIS-supported network validation</li> </ul> </li> </ul> |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|

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

The project will include a dedicated learning and knowledge management component to systematically capture, assess, and disseminate lessons learned from the demonstration of proven climate-resilient water management and operation innovations. Knowledge generation will occur throughout the project cycle, beginning with baseline assessments and continuing through pilot implementation, performance monitoring, and evaluation. Demonstrated innovations-including digital climate stress-testing and decision-support tools, climate-resilient operational approaches, and NRW management where relevant-will be documented and assessed to identify lessons learned, enabling conditions, implementation challenges, and recommendations for replication and scale up. The project will develop regional knowledge products, technical guidance, replication packages, case studies, and operational recommendations to support the adoption of proven innovations within participating countries, while documenting gender-responsive good practices and promoting inclusive participation.

At the regional level, the project will establish a dedicated knowledge exchange platform on climate-resilient water management and operation systems to facilitate continuous information sharing, peer-learning and collaboration among participating institutions. The platform will be complemented by regional knowledge-sharing events, technical exchanges, and communities of practice, and utility-to-utility learning, including through Water Operators' Partnerships (WOPs) where appropriate, to facilitate peer learning, exchange implementation experiences, and promote the replication and scaling of successful approaches. The project will build on existing regional networks and partnerships to support continued knowledge exchange and enhance long-term sustainability. By embedding learning and knowledge exchange within institutional and regional cooperation mechanisms, the project will ensure that demonstrated innovations are translated into practical guidance, institutional learning, and scalable models for climate-resilient urban water management across the Arab region.

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

The project has been developed through inclusive consultations with national and local authorities, water utilities, technical institutions, and community representatives, with particular attention to women and vulnerable groups. These consultations have informed project priorities,

pilot approaches, and stakeholder participation arrangements and will continue during full proposal development and implementation.

In **Egypt**, the project builds on consultations and technical and socioeconomic work undertaken through UN-Habitat's Hayenna Integrated Urban Development Project in Damietta, including a 2024 gap analysis and socioeconomic profiling in Al-Shoura'a with dedicated focus groups for women, youth, and mixed-gender community groups. Engagement with the Damietta Water and Sanitation Company (DWSC) and the Damietta Governorate's General Administration of Information Systems and Digital Transformation provides an institutional basis for confirming pilot areas and continuing stakeholder engagement through the Climate-Resilient Water Innovation Hub.

In **Jordan**, consultations with the Ministry of Water and Irrigation, the Water Authority of Jordan, including its NRW department, Miyahuna, and Aqaba Water Company confirmed alignment with national and utility priorities and informed potential approaches to leak detection, NRW management, and climate-resilient utility operations. Engagement with these stakeholders will continue through project planning and implementation.

In **Lebanon**, consultations with the North Lebanon Water Establishment (NLWE) confirmed the relevance of the project to climate-related water challenges, particularly in underserved and vulnerable areas. Engagement will also draw on specialized institutions and representative organizations, including the Lebanese Agricultural Research Institute and the Lebanese Union of People with Disabilities, to support evidence-based and disability-inclusive approaches. Further consultations with relevant institutions and vulnerable groups will inform pilot selection and design during full proposal development.

Across all participating countries, consultations will continue through the Climate-Resilient Water Innovation Hubs and other stakeholder engagement mechanisms to support inclusive project design, implementation, and monitoring in accordance with the Adaptation Fund's Environmental and Social Policy and Gender Policy.

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

The project draws on multiple perspectives on innovation by integrating insights from water utilities, local governments, community stakeholders, research and technical partners, and regional collaboration networks. In this context, innovation goes beyond the introduction of new technologies and includes the adaptation and scaling of proven technologies, operational practices, governance mechanisms, and collaborative approaches that respond to the climate challenges affecting urban water systems in participating countries. Through inclusive consultations, institutional partnerships, and continuous learning processes, the project ensures that climate adaptation solutions are informed by the needs of vulnerable communities, the operational experience of utilities, and the technical expertise of innovation partners.

From a **technological perspective**, the project demonstrates and adapts proven digital monitoring, climate-stress-testing, and decision-support solutions, including acoustic sensors,

pressure and flow meters, GIS-integrated platforms, and digital dashboards. These technologies will be applied in collaboration with water utilities and technical partners to better understand and respond to infrastructure and operational stresses under changing climate conditions, including NRW where relevant. Climate-informed analysis and hydraulic modeling may also be applied, where appropriate, to assess system performance under different climate scenarios and inform anticipatory action.

From an **operational perspective**, the project strengthens how water utilities manage infrastructure maintenance and respond to climate-related operational risks. Real-time monitoring and climate information will be integrated into operational planning, maintenance, and decision-making, with adapted in collaboration with utility staff and technical partners to local conditions and institutional capacities.

The project also integrates **community and governance perspectives** into the adaptation and scaling of proven innovations. The Climate-Resilient Water Innovation Hub(s) will bring together utilities, communities, and other stakeholders to share operational experience, climate and water data and information, provide feedback, and adapt proven approaches to local climate risks, needs, and institutional contexts. The Hubs will support demonstration, validation, institutional learning, and wider replication while strengthening coordination and stakeholder participation.

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

Adaptation Fund support is critical to enable the implementation of this project, as the proposed interventions address systemic challenges that cannot be effectively addressed through existing financing mechanisms alone. Climate change is placing increasing stress on water utilities through growing water scarcity, drought, rainfall, variability, extreme temperatures, and other climate-related disruptions, while existing infrastructure and operational constraints limit their capacity to anticipate and respond to these stresses. As providers of essential water services, strengthening the climate resilience of water utilities is critical not only to maintaining operations but also to the broader adaptive capacity of urban communities and systems. Water utilities in the participating countries operate under significant financial constraints due to limited revenue collection, economic instability, and competing public expenditure priorities. These constraints limit their ability to invest in digital systems, institutional strengthening, and capacity development initiatives required for climate-resilient water management.

Digital monitoring systems, climate stress-testing and decision-support tools, predictive maintenance approaches, and collaborative innovation platforms require upfront investment in technology, technical capacity, and institutional systems. Such investments are often deprioritized in resource-constrained environments despite their potential to enable anticipatory responses to climate-related water stress, reduce water losses, and strengthen the resilience of utilities and the water services on which communities and economic activities depend. By strengthening utilities' ability to anticipate, absorb, and respond to climate stresses, the project takes a systemic adaptation approach rather than addressing individual operational inefficiencies in isolation.

Adaptation Fund financing will enable the project to adapt, replicate, and scale proven climate-resilient water management innovations within the diverse institutional, operational, and climatic contexts. Building on demonstrated approaches to NRW management, digital monitoring, climate-informed utility management, and institutional strengthening in the region, the project will support their wider application while generating evidence on enabling conditions and pathways for further replication.

The regional approach further strengthens the project's alignment with the AF's funding objectives by enabling proven approaches to be adapted and assessed across different country contexts, while facilitating structured peer learning and regional knowledge exchange. Adaptation Fund support will therefore finance not only the application of proven innovations, but also the institutionalization, evidence generation, and regional replication mechanisms needed to sustain and scale climate-resilient water management beyond the project interventions.

**M. 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 integrated into the design to ensure that climate adaptation benefits continue beyond Adaptation Fund support. The project promotes long-term sustainability through four key dimensions: institutional integration, financial and operational sustainability, technical capacity, and local ownership, complemented by regional knowledge exchange and replication. **Institutionally**, climate-resilient and data-driven water management will be embedded within existing water utilities and relevant (sub)national institutions. The CRWIHs will support stakeholder coordination, knowledge exchange, and institutional learning, while governance arrangements, operational procedures, and data-sharing protocols will help integrate climate-informed water management into routine planning and operations beyond the project period. **Financially and operationally**, improved monitoring, early detection, and data-informed decision making will help utilities use limited resources more efficiently and, where applicable, reduce NRW and associated operational losses. Participating institutions will be encouraged to incorporate recurring costs for system operation, maintenance, software, and equipment replacement into their regular planning and budgeting processes. **Technically**, practical training and on-the-job learning will equip utility personnel to operate, maintain, and apply monitoring systems and digital tools. Demonstration and validation under local operational and climatic conditions will help ensure that adopted approaches are context-appropriated and can be sustained and replicated. **Local ownership** will be strengthened by involving participating institutions and stakeholders throughout needs assessment, demonstration, adaptation, and decision-making processes. Clear responsibilities for data management, system operation and maintenance, and climate-informed decision-making will be assigned to trained personnel and integrated into existing organizational functions.

At the regional level, knowledge products, replication packages, peer-learning mechanisms, including utility-to-utility learning where appropriate, and the regional knowledge exchange platform will support continued exchange and adaptation of proven approaches beyond the project period, facilitating wider replication and scale-up across the Arab region.

**N. 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                                                                                                                                                                                                   |
|--------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Compliance with the Law</i>                   | X                                             | <b>Low.</b> Installation of monitoring equipment and minor water-system works may trigger national environmental, water, and labour, which will be integrated into procurement and implementation.                                                                                        |
| <i>Access and Equity</i>                         |                                               | <b>Moderate.</b> There is a potential risk of unequal access to project benefits if not adequately managed. Site selection will consider climate exposure, service vulnerability underserved communities.                                                                                 |
| <i>Marginalized and Vulnerable Groups</i>        |                                               | <b>Moderate.</b> Without targeted measures, vulnerable groups may face barriers to participation and access. The project will implement inclusive consultations, targeted outreach, participation mechanisms, and grievance redress systems.                                              |
| <i>Human Rights</i>                              | X                                             | <b>Low.</b> Temporary works or service interruptions may affect access to water. Phased implementation, advance notification, and consideration of vulnerable users will minimize impacts.                                                                                                |
| <i>Gender Equity and Women's Empowerment</i>     |                                               | <b>Moderate</b> Women may be underrepresented in technical training, and decision-making. The project integrates gender-responsive design, participation targets, tailored capacity-building, and engagement with women's groups.                                                         |
| <i>Core Labour Rights</i>                        | X                                             | <b>Low.</b> Installation and minor works may expose workers to excavation, electrical, and infrastructure-related hazards. Compliance with national labour laws and International Labour Organization standards will be ensured, alongside occupational health and safety (OHS) measures. |
| <i>Indigenous Peoples</i>                        | X                                             | <b>Low.</b> Project areas are not expected to overlap with territories of indigenous peoples.                                                                                                                                                                                             |
| <i>Involuntary Resettlement</i>                  | X                                             | <b>Low.</b> Project activities are limited to existing infrastructure, and no land acquisition or resettlement is anticipated.                                                                                                                                                            |
| <i>Protection of Natural Habitats</i>            | X                                             | <b>Low.</b> Activities will primarily use existing water facilities and infrastructure corridors, with no expected impacts on sensitive natural habitats.                                                                                                                                 |
| <i>Conservation of Biological Diversity</i>      | X                                             | <b>Low.</b> The project has a minimal environmental footprint and does not involve activities in protected areas or areas of high biodiversity value.                                                                                                                                     |
| <i>Climate Change</i>                            | X                                             | The project directly contributes to climate adaptation and resilience.                                                                                                                                                                                                                    |

|                                                     |   |                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Pollution Prevention and Resource Efficiency</i> |   | <b>Moderate.</b> Installation and minor works may generate electronic, equipment, packaging, or repair waste. Appropriate waste management plans, and responsible disposal and recycling practices will be applied.             |
| <i>Public Health</i>                                | X | <b>Low.</b> Temporary disturbances during installation (e.g., noise, dust, service interruptions) may affect communities. Phased implementation, community notification, safe procedures, system testing will minimize impacts. |
| <i>Physical and Cultural Heritage</i>               | X | <b>Low.</b> The project will avoid culturally sensitive sites, and monitoring will be conducted during works to prevent unintended impacts.                                                                                     |
| <i>Lands and Soil Conservation</i>                  | X | <b>Low.</b> Minimal excavation is expected, with activities primarily utilizing existing infrastructure corridors, thereby limiting impacts on land and soil.                                                                   |

## PART III: IMPLEMENTATION ARRANGEMENTS

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

The project will be implemented through a coordinated regional governance structure led by UN-Habitat's Country Offices in Egypt, Lebanon, and Jordan (COs) in coordination with the regional office of Arab States (ROAS), responsible for fiduciary oversight, coordination, reporting, and compliance with AF policies. Dedicated Project Management Units (PMUs) will be established within UN-Habitat Country Offices in Egypt, Lebanon, and Jordan to coordinate and oversee day-to-day project implementation. The PMUs will be responsible for project planning, financial management, procurement, monitoring and reporting, safeguards compliance, knowledge management, and stakeholder coordination. The PMUs will serve as the operational link between UN-Habitat, the Executing Entities, national institutions, municipalities, and local partners and community to ensure effective and coordinated implementation across both countries.

National implementation will be carried out by designated executing entities (EEs) under the COs strategic and technical guidance. These EEs are expected to include, in **Egypt** the Holding Company for Water and Wastewater (HCWW) and the selected affiliated water and wastewater company in the target governorate, working in coordination with the Ministry of Housing, Utilities and Urban Communities, Damietta Governorate, and the General Organization for Physical Planning (GOPP), and building on the existing coordination structure of UN-Habitat Egypt's Hayenna Integrated Urban Development Project. DWSC's role will include supporting selection of the specific pilot zone(s) during inception, facilitating access to water and wastewater network data, integrating digital monitoring design into network works, and documenting the approach for replication across Damietta's other identified urban expansion zones and HCWW's wider affiliate network.

In **Lebanon**, the project will be implemented by the North Lebanon Water Establishment (NLWE), under the oversight of the Ministry of Energy and Water (MoEW), and in collaboration with other relevant national and local stakeholders. NLWE will support sites, technical assessments, access to relevant data, and the demonstration of innovative climate-resilient water management approaches, including NRW management where relevant. The Climate-Resilient Water Innovation Hub will support multi-stakeholder coordination, capacity development, innovation, and knowledge exchange. LARI, academic institutions, municipalities, and representative organizations will contribute relevant technical expertise and support inclusive stakeholder engagement. MoEW will ensure alignment with national water and climate adaptation priorities.

In **Jordan**, the project will be implemented through the Aqaba Water Company (AWC), the water service provider for the southern governorates, with hubs established in collaboration with the relevant municipalities. These efforts will be carried out in close coordination with the Ministry of Water and Irrigation (MWI), which will support the assessment and site-selection process based on ongoing and previous relevant initiatives, as well as local needs. The roles of MWI and AWC will include supporting site selection and technical assessments, hosting the innovation hubs, facilitating access to water network data and infrastructure, analysis of data and baseline, supporting the implementation and testing of leakage-detection interventions, and ensuring the integration of successful approaches into utility operations and national sector planning.

In all countries, civil society, local cooperatives, and women/youth associations will lead community-based water leakage monitoring and awareness activities, selected through a competitive process to ensure inclusiveness, sustainability, and community ownership.

The project will establish a Regional Project Steering Committee (RPSC) supported by National Technical Advisory Groups (NTAGs) led by Ministries of Water and UN-Habitat, ensuring policy alignment, adaptive management, and compliance with national climate policies and NDCs. Local implementation will be led by municipalities and local water companies, supported by community committees to ensure inclusive co-design, participatory monitoring, and accountability. A shared UN-Habitat-led knowledge and reporting system will enable monitoring and learning within and across countries, complemented by quarterly rotating regional meetings to support coordination, transparency, cross-country learning, and replication.

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

The project acknowledges implementation and financial risks arising from political and economic instability, procurement and implementation delays, limited uptake or maintenance of introduced systems and tools. These risks will be mitigated through country-specific implementation planning, phased procurement and deployment, close coordination with participating utilities and national counterparts, technical training and operational support, and integration of operation and maintenance requirements into institutional planning and budgets. To enhance complementarity, existing climate-resilient water management, digital water, NRW, and related utility initiatives will be mapped and reviewed during the inception phase. Regular coordination with participating national institutions, water utilities, and executing entities will further ensure alignment with national priorities and ongoing investments. Financial risks will be

managed through regular expenditure monitoring, procurement oversight, and country-level budget tracking within the regional project framework.

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

The project will be implemented in accordance with the Adaptation Fund Environmental and Social Policy (ESP) and UN-Habitat's Environmental and Social Safeguards System (ESSS). Based on the preliminary environmental and social screening of both UN-Habitat's ESSS and against the ESP's 15 principles at concept note stage (see the checklist of environmental and social principles), the project is preliminarily classified as **Category B (Medium Risk)**, as physical interventions are limited to upgrading existing water infrastructure and installation of water leakage detection sensors, monitoring equipment, and minor network repairs within existing corridors. No activities involving land acquisition, involuntary resettlement, conversion of natural habitats, adverse impacts on biodiversity, or significant irreversible environmental impacts are anticipated.

In line with the ESP, an Environmental and Social Management Plan (ESMP) corresponding with the confirmed risk category, will be prepared prior to implementation, together with site-specific assessments where triggered by national regulatory requirements (including environmental permitting for civil works where needed) or by site-specific conditions identified during the inception phase.

In addition to the ESMP and consistent with the Adaptation Fund's Gender Policy and ESP requirements on stakeholder engagement, the project will prepare two further plans during full proposal development:

- A Gender Action Plan (GAP) will be developed to operationalize the gender-responsive elements already embedded in the project design, including the targeted engagement of women's groups across all three countries. The GAP will define gender-disaggregated indicators, participation targets for women in Innovation Hub governance and technical training, and measures to address barriers to women's engagement in traditionally male-dominated technical roles within utilities. This is required both to meet the AF's Gender Policy and to ensure the gender considerations described qualitatively in this concept note are tracked and accountable through the MEL framework.
- A Stakeholder Engagement Plan (SEP) will be developed to formalize engagement protocols, communication channels, and the frequency of consultation with utilities, municipalities, community groups, and the targeted beneficiaries throughout implementation. The SEP will also define how the project-level grievance redress mechanism will be developed and managed.

While physical and environmental risks are assessed as low, the screening identified moderate risks relating to Access and Equity, Marginalized and Vulnerable Groups, Gender Equity, and Pollution Prevention and Resource Efficiency. These risks are primarily programmatic rather than construction-related, and will be managed through the following measures:

**Access and Equity, and Marginalized and Vulnerable Groups:** Site and DMA selection criteria will explicitly screen for equitable coverage of underserved areas and refugee-hosting

communities to ensure that vulnerable groups are not inadvertently excluded from monitoring, repair prioritization, or Innovation Hub participation.

**Gender Equity:** A Gender Action Plan will be developed during full proposal preparation, building on the gender-responsive elements already integrated into the design (including the targeted participation of women's groups across countries). Sex-disaggregated indicators will be tracked through the MEL framework.

**Pollution Prevention and Resource Efficiency:** Minor waste generated during installation and repair works (including replaced pipe segments and packaging) will be managed through a simplified waste management plan aligned with national regulations, prioritizing reuse, recycling, and licensed disposal.

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

The project will adopt a MEL framework to ensure continuous tracking of progress, outcomes, and learning. KPIs will be developed and aligned with the expected results of the projects such as reduction in NRW, improved water service continuity, number of leakages detected and resolved, and community satisfaction with water services. The MEL plan will include periodic data collection and analysis and structured feedback loops that allow for course correction and adaptive management throughout implementation. The local innovation hub(s) will also serve as a node for capturing lessons learned, testing improvements, and facilitating adaptive learning at the city level.

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

The framework below presents indicative concept-stage targets and milestones based on the current project design. Baselines, quantitative targets, annual milestones, and beneficiary numbers, country-level disaggregation, and detailed monitoring arrangements will be further validated and developed during full proposal preparation and project inception.

| Objective                                                                                            | Results                                                                                                                                                    | Indicator(s)                                                                                                                                                                                                                                                                                                                                                                | Baseline                                                                                                                                                                                     | Target                                                                                                                                                                                                  | Milestone                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Establishment of Climate-Resilient Water Innovation Hub(s) for Climate-Resilient Water Management | Participating institutions have strengthened capacity to understand climate risks and identify, adapt, and apply proven climate-resilient water management | <p><b>1.1</b> % of targeted stakeholders with increased awareness of climate risks affecting urban water systems and appropriate adaptation responses.</p> <p><b>1.2</b> % of targeted institutions/stakeholders applying climate adaptation practices through CRWIHs.</p> <p><b>1.3</b> Number of proven climate adaptation practices, tools, or governance mechanisms</p> | <ul style="list-style-type: none"> <li>- CRWIHs not yet established</li> <li>- Limited structured mechanisms for climate-informed innovation and multi-stakeholder collaboration.</li> </ul> | <ul style="list-style-type: none"> <li>- CRWIHs operational in all 3 participating countries</li> <li>- At least one proven climate-resilient approach demonstrated/adapted in each country.</li> </ul> | <ul style="list-style-type: none"> <li>- CRWIHs established</li> <li>- Priority climate risks, institutional needs, and proven approaches for demonstration identified.</li> </ul> |

|                                                                                                               |                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                            |                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                               | innovations .                                                                                                                                                  | demonstrated, adapted, replicated, or scaled.                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                            |                                                                                                                                                                                             |
| <b>2. Enhance the climate resilience and efficiency of urban water management systems</b>                     | Participating utilities apply digital monitoring and climate stress-testing approaches to anticipate and respond to climate-related water stresses.            | <p>2.1 Number of water utilities using digital monitoring and climate stress-testing/decision-support systems for climate-informed operations.</p> <p>2.2 Number of pilot water systems/facilities with monitoring systems or digital tools installed and operational to strengthen resilience to climate variability and stress.</p>                           | <ul style="list-style-type: none"> <li>- Digital monitoring and climate-informed decision-support applications are limited or fragmented in targeted pilot areas.</li> </ul>                                                           | <ul style="list-style-type: none"> <li>- Digital monitoring and/or climate stress-testing systems operational in at least one targeted utility/pilot area per participating country.</li> </ul>                            | <ul style="list-style-type: none"> <li>- Baseline assessments complete</li> <li>- Climate risks, monitoring requirements, and pilot systems identified and deployment initiated.</li> </ul> |
| <b>3. Strengthen local knowledge, exchange of practices, and information sharing among targeted countries</b> | Proven climate-resilient water management approaches and lessons are documented, exchanged, and made available for replication and scale-up across the region. | <p>3.1 Number of staff from targeted institutions with increased capacity to address climate-related risks in urban water management.</p> <p>3.2 Number of proven approaches documented and packaged for replication/scale-up.</p> <p>3.3 Number of participating institutions engaged in regional peer learning and utility-to-utility knowledge exchange.</p> | <ul style="list-style-type: none"> <li>- Knowledge exchange is fragmented within the region</li> <li>- No project-supported regional mechanism for systematic documentation and replication across participating countries.</li> </ul> | <ul style="list-style-type: none"> <li>- Regional knowledge exchange mechanism operational, with participation from all 3 countries</li> <li>- Demonstrated approaches documented for replication and scale-up.</li> </ul> | <ul style="list-style-type: none"> <li>- Initial lessons from country demonstrations documented</li> <li>- Regional peer-learning and utility-to-utility exchange initiated.</li> </ul>     |

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

(Table 4) Project alignment with the Adaptation Fund results framework

| Project Objective(s) <sup>19</sup> | Project Object Indicator(s) | Fund Outcome | Fund Outcome Indicator | Grant Amount (USD) |
|------------------------------------|-----------------------------|--------------|------------------------|--------------------|
|------------------------------------|-----------------------------|--------------|------------------------|--------------------|

<sup>19</sup> The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

|                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <p><b>1. Establishment of Climate-Resilient Water Innovation Hub(s) for Climate-Resilient Water Management</b></p> | <p><b>1.1</b> Percentage of targeted utility staff, municipal authorities, and other stakeholders demonstrating increased awareness and understanding of climate risks affecting urban water systems and appropriate adaptation responses.</p> <p><b>1.2</b> Number and percentage of targeted institutions applying climate-resilient water management practices, tools, or operational approaches supported through Climate-Resilient Water Innovation Hubs.</p> <p><b>1.3</b> Number of proven climate adaptation practices, tools, technologies, or governance mechanisms for water management rolled out or scaled up at regional, national, or subnational levels.</p> <p><b>1.4</b> Number of policies, strategies, plans, or</p> | <p><b>Outcome 2:</b> Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses</p> <p><b>Outcome 3:</b> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level</p> <p><b>Outcome 7:</b> Improved policies and regulations that promote and enforce resilience measures</p> <p><b>Outcome 8:</b> Innovation for effective, long-term adaptation to climate change accelerated, encouraged, and enabled to scale up</p> | <p><b>2.</b> Institutions with strengthened capacity to understand and better address climate risks and resilience (# of institutions, disaggregated by scale, by sector, and by type of institution)</p> <p><b>3A.</b> People with strengthened awareness of climate change risks and how to better address them (# of people, disaggregated by sex, by vulnerable groups, and by sector)</p> <p><b>3B.</b> People implementing new or improved adaptation actions (# of people, disaggregated by sex and by vulnerable groups)</p> <p><b>7.</b> Policies, strategies, and/or plans adopted, implemented, and/or enforced that integrate climate risk and resilience considerations (#, disaggregated by scale, by policy step, and by sector)</p> <p><b>8A.</b> Innovations successfully reaching scale up that demonstrate local participation and/or local innovation benefit (# of innovations)</p> <p><b>8B.</b> Institutions created and/or enabled that lead on innovation for adaptation to climate</p> | <p>1,000,000</p> |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|

|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                            |                                                                                                                                                                                               |           |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                                                                                  | <p>institutional procedures that integrate climate-resilient water management approaches demonstrated or supported by the project.</p> <p><b>1.5</b> Percentage of targeted institutions that incorporate climate risk information into at least one water management plan, operational procedure, or decision-making process.</p>                                                                         |                                                                                                                            | change (# of institutions, disaggregated by scale and type of institution)                                                                                                                    |           |
| <p><b>2.</b> Enhance the climate resilience and efficiency of urban water management systems</p> | <p><b>2.1</b> Number of participating water utilities using digital monitoring and climate-informed systems for early detection of water stress and anticipatory water management.</p> <p><b>2.2</b> Number of pilot water infrastructure systems improved or upgraded with digital monitoring and early detection systems to strengthen resilience to climate variability and climate-related stress.</p> | <p><b>Outcome 4:</b> Increased adaptive capacity within relevant development sector services and infrastructure assets</p> | <p><b>4.</b> Physical assets improved or constructed to withstand climate variability and change (disaggregated by km linear infrastructure and # of point infrastructure, and by sector)</p> | 2,570,000 |

|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                                                                                                                      | <p><b>2.3</b> Percentage of targeted water utilities applying climate-informed monitoring and decision-support systems to anticipate and respond to climate-related water stresses.</p>                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |
| <p><b>3.</b> Strengthen local knowledge, exchange of practices, and information sharing among targeted countries</p> | <p><b>3.1</b> Number of targeted institutions with increased capacity to respond to and mitigate climate-related risks in urban water management.</p> <p><b>3.2</b> Number of targeted institutions applying new or improved climate-resilient water management practices through project-supported knowledge exchange and peer learning.</p> <p><b>3.3</b> Number of participating institutions adapting or applying climate-resilient water management practices based on knowledge and lessons exchanged through regional peer learning mechanisms.</p> | <p><b>Outcome 2:</b> Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses</p> <p><b>Outcome 3:</b> Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level</p> | <p><b>2.</b> Institutions with strengthened capacity to understand and better address climate risks and resilience (# of institutions, disaggregated by scale, by sector, and by type of institution)</p> <p><b>3A.</b> People with strengthened awareness of climate change risks and how to better address them (# of people, disaggregated by sex, by vulnerable groups, and by sector)</p> <p><b>3B.</b> People implementing new or improved adaptation actions (# of people, disaggregated by sex and by vulnerable groups)</p> | 600,600 |

| Project Outcome(s)                                                                                                                                                                                                 | Project Outcome Indicator(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fund Output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Fund Output Indicator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Grant Amount (USD) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 1. Strengthened national and subnational institutional capacity through inclusive stakeholder engagement to anticipate, respond to, and manage climate stresses affecting water management and operations systems. | <p><b>1.1</b> Number of stakeholders (utilities, municipalities, civil society, community groups) participating in innovation hub activities and co-creation workshops.</p> <p><b>1.2</b> Number of innovative climate adaptation practices, tools, or technologies for water management developed, tested, or piloted.</p> <p><b>1.3</b> Number of technical tools, operational guidelines, or policy briefs developed and shared with relevant stakeholders.</p> <p><b>1.4</b> Number of knowledge exchange events, peer-learning sessions, or regional workshops conducted to support replication.</p> <p><b>1.5</b> Number of innovative adaptation practices, tools, or governance</p> | <p><b>Output 2.1</b> Strengthened capacity of institutions to understand and better address climate risks</p> <p><b>Output 3.1:</b> Targeted population groups participating in adaptation and risk reduction awareness activities</p> <p><b>Output 3.2:</b> Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning</p> <p><b>Output 7.1:</b> Improved integration of climate-resilience strategies into country development plans</p> <p><b>Output 8.1:</b> Innovations identified and piloted which collectively enhance local innovation capacity &amp; contribute to the development of local, national and regional</p> | <p><b>2.1.</b> Institutions supported to strengthen capacity to understand and address climate risks and resilience (# of institutions, disaggregated by scale, by sector, and by type of institution)</p> <p><b>3.1.</b> People participating in activities to improve awareness of climate risks and how to address them (# of people, disaggregated by sex and by vulnerable groups)</p> <p><b>3.2.</b> Climate resilience knowledge products and tools developed and shared with stakeholders (# of products/tools, by sector)</p> <p><b>7.1A.</b> Policies, strategies, and/or plans developed or adjusted to integrate climate risk considerations (# of policies, strategies, and/or plans, disaggregated by scale and by sector)</p> <p><b>8.1A.</b> Innovations identified that demonstrate local participation and/or</p> | 1,000,000          |

|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                                                                                                                                                                                                | mechanisms replicated or scaled up at national or subnational levels.                                                                                                                                                                                                                                                                                                                           | adaptation innovation ecosystems<br><br><b>Output 8.2:</b> Innovations identified and piloted which build the adaptation innovation evidence-base and institutional capacity | local innovation benefit (# of innovations)<br><br><b>8.1B.</b> Innovations piloted that demonstrate local participation and/or local innovation benefit (# of innovations)<br><br><b>8.2.</b> Innovation-focussed knowledge products disseminated and/or learning events facilitated that support and enable innovation capacity at a local, national, and/or regional level (# of knowledge products disseminated and/or learning events facilitated) |           |
| <b>2.</b> Impact of climate risks on water management and operational systems is detected at early stage, and climate change adaptation solutions are promoted, including for NRW management where applicable. | <b>2.1</b> Number of water utilities using digital leak detection systems and monitoring tools to manage water distribution networks.<br><br><b>2.2</b> Number of water distribution zones or networks monitored through digital leak detection and monitoring systems.<br><br><b>2.3</b> Number of physical water infrastructure assets strengthened or rehabilitated to improve resilience to | <b>Output 4.1:</b> Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability                | <b>4.1.</b> Development sector services strengthened to respond to climate variability and change (# of sector services, disaggregated by sector and by scale)                                                                                                                                                                                                                                                                                          | 2,570,000 |

|                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |                                                                                                         |                                                                                                                                                                                                     |         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
|                                                                                                                                                                                                  | climate variability.<br><br><b>2.4</b> Percentage reduction in non-revenue water (NRW) in pilot areas.                                                                                                                                                                                           |                                                                                                         |                                                                                                                                                                                                     |         |
| <b>3.</b> Enhanced regional knowledge, inclusive collaboration and capacity to replicate and scale innovative climate-resilient water management and operation solutions across the Arab region. | <b>3.1</b> Number of staff trained in digital water management, leak detection technologies, and climate-resilient infrastructure maintenance (disaggregated by gender).<br><br><b>3.2</b> Number of institutions with increased operational capacity to manage climate-resilient water systems. | <b>Output 2.1:</b> Strengthened capacity of institutions to understand and better address climate risks | <b>2.1.</b> Institutions supported to strengthen capacity to understand and address climate risks and resilience (# of institutions, disaggregated by scale, by sector, and by type of institution) | 600,600 |

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

To be developed during full project development.

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

To be developed during full project development.

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

**A. Record of endorsement on behalf of the government<sup>20</sup>** *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project / programme. Add more lines as necessary. The endorsement letters should*

<sup>6</sup> 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.

*be attached as an annex to the project/programme proposal. Please attach the endorsement letters with this template; add as many participating governments if a regional project/programme:*



ADAPTATION FUND

Letter of Endorsement by Government

11 of August 2026

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

**Subject: Endorsement for Regional Project: "Capturing Every Drop. Fostering innovation to increase the resilience of urban water systems in the Arab region".**

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

Accordingly, I am pleased to endorse the above regional project proposal, submitted under the Adaptation Fund's Programme on Innovation: Large Grants Projects, with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) Egypt Office and executed by Governments of Egypt, Jordan, Lebanon and Sudan.

Sincerely,

**Dr. Saber Mahmoud Osman**

*Saber Osman*  
Assistant Minister

Head of Climate Change Central Department  
UNFCCC National Focal Point  
Egyptian Environmental Affairs Agency  
Ministry of Local Development and Environment

*Basma*



Ministry of Environment

Ref.No

Date

7-2-3164  
7-5-2026

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

**Subject: Endorsement letter on the regional project idea titled “Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region”**

In my capacity as the Designated Authority for the Adaptation Fund in Jordan, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country. It is also well aligned with Jordan's Climate Change Policy, the Economic Modernization Vision of Jordan's water management initiative, the Green Growth National Action Plan, and the National Water Strategy. The regional approach shall enhance management of water challenges and pressure on resources, help communities cope with climate-induced water stress and foster our cooperation with other countries in the region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN-Habitat and executed by the relevant national executing entities.

Kind regards,

**Minister of Ministry of Environment**

**Dr.Aiman Abdalkh Soleiman**

THE HASHEMITE KINGDOM OF JORDAN

TEL : +962 6 5560113 FAX : +962 6 5516377 P.O.Box : 1408 AMMAN 11941 JORDAN www.moenv.gov.jo



**REPUBLIC OF LEBANON**  
**MINISTRY OF ENVIRONMENT**

THE MINISTER

Beirut, 26/2/2026  
Our Ref: 512/B/2026

Adaptation Fund Climate Innovation Accelerator (AFCIA)  
Adaptation Fund Board Secretariat  
c/o Global Environment Facility  
Mail stop: N 6-600  
1818 H Street NW  
Washington DC 20433, USA

Dear Sir/Madam,

**Subject:** Support Letter for UN-Habitat's "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region." Project idea.

In its capacity as the National Designated Authority (NDA) to the Adaptation Fund for Lebanon, the Ministry of Environment hereby expresses its support for the regional project idea entitled: "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region" submitted by the UN-Habitat to the Ministry of Environment on February 10, 2026.

Notwithstanding the foregoing, the Ministry of Environment expects that during the preparation of the full funding proposal, the UN-Habitat and its partners will work closely with the Ministry's team to ensure that the proposal includes activities and budget directly related to the mandate and scope of work of the Ministry of Environment, hence supporting the Ministry in ensuring sustainable environmental impact of the project. In addition, the Ministry expects the UN-Habitat to take the necessary measures to ensure that the project is implemented in a manner consistent with applicable national laws, in line with the strategic vision of the Ministry.

Accordingly, the Ministry supports this project submission to the AFCIA programme and looks forward to continued collaboration with UN-Habitat and relevant national institutions during the next stages of project development.

Please accept the assurances of our highest consideration.

Sincerely yours,

Minister of Environment  
Tamara El-Zein, PhD



Cc: - UN-Habitat Country office  
- MoE - Service of Registrar - Department of Public Relations and External Affairs  
- MoE - Service of Environmental Technology  
- MoE - Service of Environmental Technology - Department of Air Quality  
- MoE - Climate Change Projects

---

Ministry of Environment, Lazarich Center, 8<sup>th</sup> Floor, Block A-4 New  
P.O.Box: 11/2727; Beirut-Lebanon. Tel: +(961)-1-976555 or 4-Digit Number: 1789; Fax: +(961)-1-976534  
Home Page: [www.moe.gov.lb](http://www.moe.gov.lb)

## B. Implementing Entity certification

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

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans, including **Egypt's Updated First Nationally Determined Contribution 2030 (Second Update)**, **National Climate Change Strategy 2050**, and **National Water Resources Plan 2017–2037**; **Jordan's NDC 3.0**, **National Adaptation Plan**, and **National Water Strategy 2023–2040**; and **Lebanon's NDC 3.0**, **National Adaptation Plan 2025**, and **National Water Sector Strategy 2024–2035**. These frameworks prioritize climate resilience, water security, strengthened institutional capacity, and climate-informed water management. The proposed project supports these priorities by strengthening the climate resilience of water utilities, adapting and scaling proven climate-resilient water management innovations, promoting climate-informed and data-driven operations, and facilitating regional knowledge exchange and replication. Subject to the approval by the Adaptation Fund Board, I commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

Raf Tuts, Director,



Global Solutions Division, UN-Habitat

Implementing Entity Coordinator

Date: August 14, 2026

Tel. and email: +254-713-601278  
|raf.tuts@un.org

Project Contact Person: Yasmine Mostafa

Tel. And Email: yasmine.mostafa@un.org | +20 2 3380588



**REPUBLIC OF LEBANON**  
**MINISTRY OF ENVIRONMENT**

THE MINISTER

Beirut, 26/2/2026  
Our Ref: 512/B/2026

Adaptation Fund Climate Innovation Accelerator (AFCIA)  
Adaptation Fund Board Secretariat  
c/o Global Environment Facility  
Mail stop: N 6-600  
1818 H Street NW  
Washington DC 20433, USA

Dear Sir/Madam,

**Subject:** Support Letter for UN-Habitat's "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region." Project idea.

In its capacity as the National Designated Authority (NDA) to the Adaptation Fund for Lebanon, the Ministry of Environment hereby expresses its support for the regional project idea entitled: "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region" submitted by the UN-Habitat to the Ministry of Environment on February 10, 2026.

Notwithstanding the foregoing, the Ministry of Environment expects that during the preparation of the full funding proposal, the UN-Habitat and its partners will work closely with the Ministry's team to ensure that the proposal includes activities and budget directly related to the mandate and scope of work of the Ministry of Environment, hence supporting the Ministry in ensuring sustainable environmental impact of the project. In addition, the Ministry expects the UN-Habitat to take the necessary measures to ensure that the project is implemented in a manner consistent with applicable national laws, in line with the strategic vision of the Ministry.

Accordingly, the Ministry supports this project submission to the AFCIA programme and looks forward to continued collaboration with UN-Habitat and relevant national institutions during the next stages of project development.

Please accept the assurances of our highest consideration.

Sincerely yours,

**Minister of Environment**  
**Tamara EL-Zein, PhD**



Cc:

- UN-Habitat Country office
- MoE - Service of Registrar - Department of Public Relations and External Affairs
- MoE - Service of Environmental Technology
- MoE - Service of Environmental Technology - Department of Air Quality
- MoE - Climate Change Projects



## ADAPTATION FUND

### Letter of Endorsement by Government

11 of August 2026

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

**Subject: Endorsement for Regional Project: "Capturing Every Drop. Fostering innovation to increase the resilience of urban water systems in the Arab region".**

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

Accordingly, I am pleased to endorse the above regional project proposal, submitted under the Adaptation Fund's Programme on Innovation: Large Grants Projects, with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) Egypt Office and executed by Governments of Egypt, Jordan, Lebanon and Sudan.

Sincerely,

**Dr. Saber Mahmoud Osman**

*Saber Osman*

Assistant Minister

Head of Climate Change Central Department

UNFCCC National Focal Point

Egyptian Environmental Affairs Agency

Ministry of Local Development and Environment



Ministry of Environment

Ref.No

7-2-3164

Date

7-5-2026

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

**Subject: Endorsement letter on the regional project idea titled “Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region”**

In my capacity as the Designated Authority for the Adaptation Fund in Jordan, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country. It is also well aligned with Jordan's Climate Change Policy, the Economic Modernization Vision of Jordan's water management initiative, the Green Growth National Action Plan, and the National Water Strategy. The regional approach shall enhance management of water challenges and pressure on resources, help communities cope with climate-induced water stress and foster our cooperation with other countries in the region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN-Habitat and executed by the relevant national executing entities.

Kind regards,

**Minister of Ministry of Environment**

**Dr.Aiman Abdalla Soleiman**



Ministry of Environment

Ref.No

7-2-3164

Date

7-5-2026

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

**Subject: Endorsement letter on the regional project idea titled “Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region”**

In my capacity as the Designated Authority for the Adaptation Fund in Jordan, I confirm that the above regional project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country. It is also well aligned with Jordan's Climate Change Policy, the Economic Modernization Vision of Jordan's water management initiative, the Green Growth National Action Plan, and the National Water Strategy. The regional approach shall enhance management of water challenges and pressure on resources, help communities cope with climate-induced water stress and foster our cooperation with other countries in the region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by UN-Habitat and executed by the relevant national executing entities.

Kind regards,

**Minister of Ministry of Environment**

**Dr.Aiman Abdalla Soleiman**



**REPUBLIC OF LEBANON**  
**MINISTRY OF ENVIRONMENT**

THE MINISTER

Beirut, 26/2/2026  
Our Ref: 512/B/2026

Adaptation Fund Climate Innovation Accelerator (AFCIA)  
Adaptation Fund Board Secretariat  
c/o Global Environment Facility  
Mail stop: N 6-600  
1818 H Street NW  
Washington DC 20433, USA

Dear Sir/Madam,

**Subject:** Support Letter for UN-Habitat's "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region." Project idea.

In its capacity as the National Designated Authority (NDA) to the Adaptation Fund for Lebanon, the Ministry of Environment hereby expresses its support for the regional project idea entitled: "Capturing every drop. Fostering innovation to increase the resilience of urban water systems in the Arab region" submitted by the UN-Habitat to the Ministry of Environment on February 10, 2026.

Notwithstanding the foregoing, the Ministry of Environment expects that during the preparation of the full funding proposal, the UN-Habitat and its partners will work closely with the Ministry's team to ensure that the proposal includes activities and budget directly related to the mandate and scope of work of the Ministry of Environment, hence supporting the Ministry in ensuring sustainable environmental impact of the project. In addition, the Ministry expects the UN-Habitat to take the necessary measures to ensure that the project is implemented in a manner consistent with applicable national laws, in line with the strategic vision of the Ministry.

Accordingly, the Ministry supports this project submission to the AFCIA programme and looks forward to continued collaboration with UN-Habitat and relevant national institutions during the next stages of project development.

Please accept the assurances of our highest consideration.

Sincerely yours,

**Minister of Environment**  
**Tamara EL-Zein, PhD**



Cc:

- UN-Habitat Country office
- MoE - Service of Registrar - Department of Public Relations and External Affairs
- MoE - Service of Environmental Technology
- MoE - Service of Environmental Technology - Department of Air Quality
- MoE - Climate Change Projects



## ADAPTATION FUND

### Letter of Endorsement by Government

11 of August 2026

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

**Subject: Endorsement for Regional Project: "Capturing Every Drop. Fostering innovation to increase the resilience of urban water systems in the Arab region".**

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

Accordingly, I am pleased to endorse the above regional project proposal, submitted under the Adaptation Fund's Programme on Innovation: Large Grants Projects, with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) Egypt Office and executed by Governments of Egypt, Jordan, Lebanon and Sudan.

Sincerely,

**Dr. Saber Mahmoud Osman**

*Saber Osman*

Assistant Minister

Head of Climate Change Central Department

UNFCCC National Focal Point

Egyptian Environmental Affairs Agency

Ministry of Local Development and Environment

*Basma*



ADAPTATION FUND

## Initial Gender Assessment

### 1. Gender Equity and Women's Empowerment

The project recognizes that women may be underrepresented in technical training and decision-making. To address this, the project integrates gender-responsive design, participation targets, tailored capacity-building, and engagement with women's groups.

A Gender Action Plan (GAP) will be developed to operationalize the gender-responsive elements embedded in the project design, including the targeted engagement of women's groups across all three countries. The GAP will define gender-disaggregated indicators, participation targets for women in Innovation Hub governance and technical training, and measures to address barriers to women's engagement in traditionally male-dominated technical roles within utilities. The GAP will also ensure that gender considerations are tracked and accountable through the MEL framework.

The project will develop the Gender Action Plan during full proposal preparation, building on the gender-responsive elements already integrated into the design, including the targeted participation of women's groups across countries. Sex-disaggregated indicators will be tracked through the MEL framework.

### 2. Gender Considerations in Egypt

Since 2020, economic shocks have affected local employment, with women's unemployment reaching almost 50% in 2020 and many women subsequently entering low-paid and precarious work. More reliable water and sanitation services can reduce pressures on vulnerable households and local businesses.

The project builds on UN-Habitat Egypt's existing Hayenna socioeconomic profiling, including dedicated focus groups with women and youth in Al-Shoura'a. This provides a methodology that can be extended to other candidate zones during inception, as well as an established channel for women's and youth participation in Hub governance and monitoring roles, in line with the project's cross-cutting Gender Action Plan.

The project also builds on consultations and technical and socioeconomic work undertaken through UN-Habitat's Hayenna Integrated Urban Development Project in Damietta, including a 2024 gap analysis and socioeconomic profiling in Al-Shoura'a with dedicated focus groups for women, youth, and mixed-gender community groups.

### 3. Gender Considerations in Jordan

Women and vulnerable groups are particularly vulnerable to the impacts of water insecurity and service disruptions. In many Jordanian households, women play an important role in managing household water needs and are often more affected by unreliable water supply and service interruptions. The project is also expected to reduce the burden placed on women in managing household water needs through the improvement of the continuity and equity of water distribution.

The Climate-Resilient Water Innovation Hubs will foster cross-sectoral collaboration among WAJ, Aqaba Water Company, municipalities, communities, and technical actors, ensuring inclusive engagement by actively involving women, local community representatives, and representatives of refugee and low-income populations in the design and refinement of solutions.

While women are increasingly represented in the water sector in Jordan, further efforts are needed to strengthen their participation in technical and decision-making roles. The project will address this through gender-responsive participation, capacity-building and targeted engagement.

MWI has incorporated specific gender targets under its Gender Mainstreaming Policy in the Jordanian Water Sector, in line with the FAO gender study, which aligns with the objectives of the project.

#### **4. Gender Considerations in Lebanon**

Akkar and North Lebanon include vulnerable Lebanese and displaced communities with limited capacity to cope with climate-induced water insecurity. Strengthening climate-informed utility management can contribute to more responsive and equitable water services, particularly for communities with limited coping capacity.

Women and vulnerable groups may experience differentiated impacts from water insecurity and barriers to participation. Gender-responsive stakeholder assessments, capacity development, Hub activities, and knowledge sharing will promote their equitable and meaningful participation.

Engagement will also draw on specialized institutions and representative organizations, including the Lebanese Agricultural Research Institute (LARI) and the Lebanese Union of People with Disabilities, to support evidence-based and disability-inclusive approaches. Further consultations with relevant institutions and vulnerable groups will inform pilot selection and design during full proposal development.

#### **5. Gender-Responsive Stakeholder Engagement**

The project has been developed through inclusive consultations with national and local authorities, water utilities, technical institutions, and community representatives, with particular attention to women and vulnerable groups. These consultations have informed project priorities, pilot approaches, and stakeholder participation arrangements and will continue during full proposal development and implementation.

In Egypt, consultations included the 2024 gap analysis and socioeconomic profiling in Al-Shoura'a, with dedicated focus groups for women, youth, and mixed-gender community groups.

Across all participating countries, consultations will continue through the Climate-Resilient Water Innovation Hubs and other stakeholder engagement mechanisms to support inclusive project design, implementation, and monitoring in accordance with the Adaptation Fund's Environmental and Social Policy and Gender Policy.

## **6. Gender-Responsive Project Design**

The project will strengthen institutional innovation capacity and multi-stakeholder collaboration through the establishment of Climate-Resilient Water Innovation Hubs. The expected outcome is improved national and subnational institutional capacity to anticipate, respond to, and manage climate stresses affecting water management and operational systems, informed by sex-disaggregated data where available.

Stakeholder mapping and needs assessments will identify priority climate-related water management challenges, existing innovation initiatives, institutional roles, and capacity gaps, ensuring balanced representation of women and men and the inclusion of vulnerable and marginalized groups, including older persons and Internally Displaced People (IDPs).

The Climate-Resilient Water Innovation Hubs will foster collaboration and gender-responsive and inclusive participation among stakeholders and promote inclusive and participatory approaches to water management.

Baseline technical assessments of pilot facilities will also identify monitoring requirements, priority climate risks, existing operational systems, and gender-related capacity needs.

## **7. Gender-Responsive Monitoring and Accountability**

The Gender Action Plan will define gender-disaggregated indicators and participation targets for women in Innovation Hub governance and technical training. Sex-disaggregated indicators will be tracked through the MEL framework.

The project will incorporate gender considerations into monitoring and evaluation arrangements, including the collection and use of sex-disaggregated data where available and the tracking of women's participation in relevant project activities.



ADAPTATION FUND

## Initial Consultations Report

### 1. Background and purpose of consultations

The project has been developed through inclusive consultations with national and local authorities, water utilities, technical institutions, and community representatives, with particular attention to women and vulnerable groups. These consultations have informed project priorities, pilot approaches, and stakeholder participation arrangements and will continue during full proposal development and implementation.

The consultations have focused on understanding climate-related water management challenges, institutional and operational priorities, potential pilot approaches, opportunities for innovation, and the needs of vulnerable and underserved populations.

### 2. Consultations and stakeholder engagement by country

#### 2.1 Egypt

The project builds on consultations and technical and socioeconomic work undertaken through UN-Habitat's Hayenna Integrated Urban Development Project in Damietta. This includes a 2024 gap analysis and socioeconomic profiling in Al-Shoura'a, with dedicated focus groups for women, youth, and mixed-gender community groups.

Engagement with the Damietta Water and Sanitation Company (DWSC) and the Damietta Governorate's General Administration of Information Systems and Digital Transformation provides an institutional basis for confirming pilot areas and continuing stakeholder engagement through the Climate-Resilient Water Innovation Hub.

The existing Hayenna work provides a basis for further engagement in candidate pilot areas. In particular, the socioeconomic profiling and focus groups undertaken in Al-Shoura'a provide an established channel for women's and youth participation in Hub governance and monitoring roles.

The specific pilot zone(s) within Damietta will be confirmed during the inception phase in coordination with DWSC and the Governorate, drawing on the existing evidence from Al-Shoura'a and comparable evidence for other expansion zones.

Where new network works are involved, advance notification and consultation with affected residents and businesses, alongside coordination with the Hayenna project's land-use planning work will take place.

The stakeholders identified and engaged in Egypt include the Holding Company for Water and Wastewater (HCWW), Damietta Water and Sanitation Company (DWSC), Damietta Governorate, the Damietta Governorate's General Administration of Information Systems and

Digital Transformation, the General Organization for Physical Planning (GOPP), women and youth, community representatives, residents and businesses in candidate pilot areas, and UN-Habitat Egypt through the Hayenna Integrated Urban Development Project.

## **2.2 Jordan**

Consultations with the Ministry of Water and Irrigation (MWI), the Water Authority of Jordan (WAJ), including its Non-Revenue Water (NRW) department, Miyahuna, and Aqaba Water Company (AWC) confirmed alignment with national and utility priorities and informed potential approaches to leak detection, NRW management, and climate-resilient utility operations. Engagement with these stakeholders will continue through project planning and implementation.

The consultations have also informed the potential application of digital solutions for leakage detection and NRW reduction and the selection of potential pilot areas.

The Jordan pilot will be implemented in partnership with AWC. The specific governorate and pilot zone will be identified and confirmed through the multilayered vulnerability assessment in close coordination with MWI, AWC, and relevant local stakeholders. Continued collaboration with municipalities and local stakeholders through the Climate-Resilient Water Innovation Hubs will also be maintained.

The stakeholders identified and consulted in Jordan include the Ministry of Water and Irrigation (MWI), the Water Authority of Jordan (WAJ), including its Non-Revenue Water (NRW) department, Miyahuna, and Aqaba Water Company (AWC), as well as relevant municipalities, local community representatives, women, refugee and low-income populations, and technical actors.

## **2.3 Lebanon**

Consultations with the North Lebanon Water Establishment (NLWE) confirmed the relevance of the project to climate-related water challenges, particularly in underserved and vulnerable areas.

The project will also draw on specialized institutions and representative organizations, including the Lebanese Agricultural Research Institute (LARI) and the Lebanese Union of People with Disabilities, to support evidence-based and disability-inclusive approaches. Further consultations with relevant institutions and vulnerable groups will inform pilot selection and design during full proposal development.

The project also identifies the Ministry of Energy and Water (MoEW), academic institutions, municipalities, and representative organizations as stakeholders contributing to technical expertise, coordination, and inclusive stakeholder engagement.

The specific pilot facilities will be identified during proposal development in consultation with NLWE, MoEW, and other relevant stakeholders, based on climate risks, operational priorities, and opportunities for innovation.

The stakeholders identified and consulted in Lebanon include NLWE, MoEW, Lebanese Agricultural Research Institute (LARI), Lebanese Union of People with Disabilities, academic

institutions, municipalities, representative organizations, vulnerable and displaced communities, and other relevant national and local stakeholders.

### **3. Gender and vulnerable groups**

The project has given particular attention to women and vulnerable groups as part of the consultation process. Consultations have included women and vulnerable groups and their participation will continue through project development and implementation.

#### **Egypt**

The Hayenna socioeconomic profiling in Al-Shoura'a included dedicated focus groups with women, youth, and mixed-gender community groups. This provides an existing basis for continued participation of women and youth in Hub governance and monitoring roles.

#### **Jordan**

The project identifies women, refugee populations and low-income populations as groups requiring particular attention. It notes that women play an important role in managing household water needs and can be particularly affected by unreliable water supply and service interruptions.

The proposed Urban Innovation Hubs will involve women, local community representatives, and representatives of refugee and low-income populations in the design and refinement of solutions. Additionally, MWI has incorporated gender targets under its Gender Mainstreaming Policy in the Jordanian Water Sector.

#### **Lebanon**

The project identifies vulnerable Lebanese and displaced communities in Akkar and North Lebanon, as well as women and vulnerable groups who may experience differentiated impacts from water insecurity and barriers to participation. Gender-responsive stakeholder assessments, capacity development, Hub activities and knowledge sharing are intended to promote their equitable and meaningful participation.

The involvement of the Lebanese Union of People with Disabilities is specifically intended to contribute to disability-inclusive approaches.

### **4. How consultations have informed the project design**

#### **Egypt**

Consultations and existing technical and socioeconomic work in Damietta informed the focus on urban water resilience and the potential pilot areas. The Al-Shoura'a gap analysis informed consideration of the needs of existing and expanding urban areas. Engagement with DWSC and the Governorate provides the basis for confirming the pilot zone(s), while the existing women and youth focus groups provide a basis for their continued participation in the Innovation Hub.

#### **Jordan**

Consultations with MWI, WAJ and its NRW department, Miyahuna and AWC informed the focus on leak detection, NRW management and climate-resilient utility operations. Engagement with MWI and AWC will inform pilot site selection, while utility engagement informed the proposed use of digital monitoring and leakage-detection solutions.

## **Lebanon**

Engagement with NLWE confirmed the relevance of the project to climate-related water challenges, particularly in underserved and vulnerable areas. Engagement with LARI and the Lebanese Union of People with Disabilities supports the proposed evidence-based and disability-inclusive approach. Further consultations are explicitly intended to inform pilot selection and design during full proposal development.

## **5. Consultation and stakeholder engagement going forward**

Across all participating countries, consultations will continue through the Climate-Resilient Water Innovation Hubs and other stakeholder engagement mechanisms to support inclusive project design, implementation and monitoring in accordance with the Adaptation Fund Environmental and Social Policy and Gender Policy.

Further consultation is particularly envisaged for:

- confirmation of pilot locations;
- pilot selection and design;
- stakeholder mapping and needs assessments;
- identification of priority climate-related water management challenges;
- identification of institutional roles and capacity gaps;
- assessment and adaptation of innovative solutions;
- continued engagement with vulnerable groups;
- project implementation and monitoring.

The project will also establish multi-stakeholder Climate-Resilient Water Innovation Hubs, with governance arrangements, coordination mechanisms, partnership frameworks, data-sharing protocols and inclusive participation mechanisms.