



ADAPTATION FUND

AFB/PPRC.38/Inf.20
25 September 2026

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

PROPOSAL FOR MOROCCO



ADAPTATION FUND

ADAPTATION FUND BOARD SECRETARIAT
TECHNICAL REVIEW OF PROJECT PROPOSAL FOR
"STRENGTHENING THE RESILIENCE OF OASIS ECOSYSTEMS AND IMPROVING THE
ADAPTIVE CAPACITY OF COMMUNITIES IN THE DRAA BASIN TO CLIMATE CHANGE"

Project Title	Strengthening the Resilience of Oasis Ecosystems and Improving the Adaptive Capacity of Communities in the Draa Basin to Climate Change
Project ID	AF00000432
Category	Regular size project (over \$1 million)
Type	Single country project
Stage	Concept
Country	Morocco
Implementing Entity	ADA
Financing Requested	USD 20,000,000.00
Reviewer	Alexandra Munoz

Co-reviewer(s)

IE Contact Person

ABDELHAKIM ARIBA ,EL MAHDI ARRIFI,MERYEM ANDALOUSSI

Secretariat's Overall Comment

The proposal includes a request for a project formulation grant of USD 150,000. The initial technical review raised several issues, such as the need to strengthen the adaptation rational, project's cost-effectiveness, amendment to the results framework alignment, strengthening sustainability, including critical ESP requirements such as consultation information and an Initial Gender Assessment, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The second technical review found that the proposal has addressed most of the CRs and CARs requests. Namely, missing quantitative data for gender assessment, explanation on how project will ensure equitable distribution of resources, incomplete information for consultation process, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The third technical review addressed most of the CRs and CARs requests. However, there are some remaining issues, mainly the project budget, proposal length, PFG dates, and objectives budget, as discussed in the Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review. The fourth technical review raises some minor issues, such as the revision of some outputs, amendment to the results framework alignment, among others, as is discussed in the number of Clarification Requests (CRs) and Corrective Action Requests (CARs) raised in the review.

Country Eligibility

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

Response: Yes

Secretariat: Yes. Morocco is considered as a "climate hotspot," highly exposed to the impacts of climate change, leading to persistent droughts in semi-desert plains and floods in coastal plains. January 5, 2026

Project Eligibility

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

Response: Yes

Secretariat: Yes. As per the Endorsement letter dated February 14th, 2025. January 5, 2026

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

Response: Pending

Secretariat: No. The concept note is 55 pages including its annexes. CR1: Kindly adjust the concept note to a maximum of 50 pages, including all annexes. CR2: Please include titles for all tables in the concept note to facilitate easier reference during the Technical Reviews. January 5, 2026

Response: Pending

Secretariat: CR1: Cleared. The concept note is now 43 pages CR2: Cleared. All tables provide a title and a number. NOTE1: Please try to use font 10 please. Hard to read with font 9.5 CR1 (NEW): Please update the start date of the proposal also keep in mind that the PFG implementation needs to be completed before project start. May 11, 2026

Response: Pending

Secretariat: CR1 (re-opened): 1. The proposal (50 pg.) and annexes (36 pg.) are 86 pages long. Please adjust the length of the concept note to no more than 50 pages, including annexes. 2. Please utilize paragraph numbers in the proposal document. NOTE1: Cleared Font size 10 is used. CR1 (NEW): Not Cleared 1. Start of project adjusted to January 2028. PFG was completed before project start (February 2025-May 2026), but the dates suggest it has already been implemented. 2. Please clarify why the PFG form presents two sets of figures for the same activities, with one value in the first table and a second value in the second table. Please rectify. CR2 (NEW): Please adjust the resubmission date on page 1. The date should reflect the date of the last submission. June 23, 2026

Response: Not Cleared

Secretariat: CR1(re-opened): Cleared. 1. The proposal is now 50 pages long, including annexes. 2. All paragraphs in the document are now numbered. CR1(NEW): Cleared. 1. The PFG implementation schedule has been corrected and now covers the period January–May 2027, ensuring completion before the proposed project start. 2. The PFG budget tables have been revised and the figures presented are now fully consistent throughout the document. CR2(NEW): Cleared. The resubmission date has been adjusted (7/20/2026). CR18(NEW): Please include a table of contents and a list of acronyms. August 13, 2026

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

Response: Pending

Secretariat: Yes. However, additional information is required. The concept note (pp 15 – 22) outlines, for each component, the related outcomes, outputs, and activities. It also includes a table linking concrete adaptation actions to the climate risks/stressors addressed and the expected adaptation benefits or resilience outcomes. However, additional details are needed. CR4: Please provide more details about each output (for example: who would be involved, only governmental actors or also additional stakeholders), including statistics where possible. CR5: Kindly revise the Theory of Change (ToC) to explicitly link the outputs and outcomes to the overall objective of the proposed project. CR6: Please include a diagram of the ToC. This information should be presented under Part II.A. This should contain at least: - activities as well as the outputs - risks and assumptions made CR7: Please

clarify whether the project consists of three or four components. In the “Project/Programme Objectives” section (page 12) and Part II.A (page 15), three components are listed, whereas in the Table of “Project/Programme Components and Financing”, there appears to be a fourth component that encompasses knowledge-related actions as well as appears in page 22 and Table 4. January 5, 2026

Response: Pending

Secretariat: CR4: Cleared. Each output includes stakeholder involvement (pgs. 12-19). Example, page 12, component 1, Output1.1. provides a list of agencies that will be involved, and statistics. CR5: Cleared. it includes all requested elements, and it is consistent with overall project, as per ToR in page 20 CR6: Cleared. ToR in page 20. It contains activities, outputs; risks and assumptions CR7: Cleared. Proposal shows clearly and consistently 4 components as per page 9; Part II Project/Programme page 12-19; and ToR in page 20 May 11, 2026

Response: Not Cleared

Secretariat: CR19(NEW): Please note that some Outputs, based on how they are currently phrased, correspond to Outcomes (for example, Output 1.3). Please rewrite them so that they comply with the definition of an Output, i.e., the direct deliverable product or service produced. CR20(NEW): Please clarify in paragraph 47 (page 11) whether the number of date palms to be cleared and maintained will be 100,000 (later, in paragraph 50, page 12, this figure is indicated as 300,000). In addition, please ensure consistency of the figures throughout the document. CR21(NEW): Please relocate the table currently included in Annex 1 to Part II.A. The information contained in this table needs to be presented in this section rather than as an annex, since Part II.A is where all activities to be financed by the AF are described. CR22(NEW): Please remove from Part II.A the paragraphs that provide background and contextual information (such as paragraph 59 on page 13). Please note that this information should be included exclusively in Part I. CR23(NEW): Please provide further details on the activities to be financed. For example, for Activity 4.1.2 (paragraph 82, page 17), please indicate the number of policy briefs, technical reports, and other similar reports to be produced, as well as their frequency of preparation. CR24(NEW): Please add the adaptation problem being addressed to the Theory of Change diagram (page 19). This should be placed above the Goal Statement. August 13, 2026

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

Response: Pending

Secretariat: Yes. However, additional information is required. Part II B (pages 22 to 24) of the concept note identifies the direct and indirect beneficiaries, and outlines some of the project’s economic, social, and environmental benefits, impact on gender-sensitive development, and the alignment with the Adaptation Fund Policy. However, it does not provide specific and quantifiable information nor an Initial Gender Assessment. CAR1: Please provide more details about the economic, social, and environmental benefits with specific and quantifiable data where possible. Kindly expand specifically on what and how these benefits will be achieved. CAR2: Kindly provide specific information on the expected beneficiaries (direct and indirect) for: (i) economic benefits; (ii) social benefits, and (iii) environmental benefits, and the (iv) overall project. The information must be disaggregated by gender and age, where possible. Specify whether marginalized and vulnerable groups and indigenous communities have been identified in the project area, and if so, specify how the project benefits those groups. CR8: Kindly explain how the project will ensure the equitable distribution of benefits. CAR3: Kindly include the Initial Gender Assessment of the project which is referenced on page 23. The information provided should include at least: 1. qualitative and quantitative data for gender roles, activities, needs, and available opportunities and challenges or risks for men and women in the areas of intervention and at the national level.

January 5, 2026

Response: Pending

Secretariat: CAR1: Cleared. Proposal provided estimated of likely economic outcome based on similar projects (pg. 21-22); social benefits (pg. 22-23) and environmental benefits (pg. 23) CAR2: Cleared. Proposal provided estimated number of beneficiaries by area (economic, social and environmental); information is disaggregated by gender and age. (Table 4, pg.21). Page 34, second paragraph in section H, reports that no Indigenous Peoples were identified in the project area. CR8: Not Cleared. Vulnerable groups were consulted (section H, pg. 34); and equity consideration were taken (Table 9 Access and Equity, pg. 40). However, explanation is missing on how project will ensure equitable distribution of resources. Table 9, pg. 40, sections “access and equity” and “gender equality...” include mitigation measures, but the “how” is not clear. CAR3: Not Cleared. Gender Assessment included (Table 4, pg. 21). Some of the information requested was provided: women role and activities, (qualitative data); employment rate (only quantitative data) (pg. 35); opportunities and vulnerabilities, qualitative data (pg.35); needs (Table 8, pg. 35) Please provide quantitative data and explanation on how change in gender dynamic might drive long-term change. May 11, 2026

Response: Pending

Secretariat: CR8: Cleared Explanation on how project will ensure access and equity is clear in Table 9 (pg. 42) for the section “access and equity” and in section H for the section “gender equity”. CAR3: Cleared Gender Assessment is included. Qualitative data is provided: data on women’s share of the oasis population, rural residence, employment, illiteracy, agricultural contribution, land ownership, financial inclusion, and cooperative participation (pg. 34-35). June 23, 2026

Response: Not Cleared

Secretariat: CR25(NEW): Please clarify the mechanism that will ensure that at least 40% and 20% of direct beneficiaries are women and youth, respectively. August 13, 2026

Is the project / programme cost effective?

Response: Pending

Secretariat: Unsure. Part II C (pages 24 to 25) of the concept note provides a broad statement of the project cost-effectiveness, without information on the specific components. It does not specify clearly the scope and approach, nor method for the calculation. It is not possible to demonstrate the cost-effectiveness of the selected activities. CR9: Kindly provide a robust justification for the cost-effectiveness of the project and selected measures, including scope, approach, and estimates of the evaluation where possible. CR10: Kindly explain the methodology used to calculate direct and indirect beneficiaries, including disaggregation by gender and other vulnerable groups. January 5, 2026

Response: Pending

Secretariat: CR9: Cleared. Cost per beneficiary and cost of water interventions provided. as well as method for calculations, and estimates. (pg. 24-25) CR10: Cleared. Addressed at page 21. May 11, 2026

Response: Not Cleared

Secretariat: CR26(NEW): Please include a table comparing the proposed cost of each component with the cost of alternative options, in order to assess the project’s cost-effectiveness. Please note that this proposal and

PACCZO are different projects; therefore, the cost-effectiveness rationale should include additional elements to further substantiate it. CR27(NEW): Please remove paragraph 112 (page 23) from Part II.C and incorporate its information into Part II.B, which addresses the project benefits. August 13, 2026

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

Response: Pending

Secretariat: Yes. However, adjustments are required. The project identifies relevant adaptation-related plans and strategies in Part II.D (pages 26 – 28), including the National Drinking Water Supply and Irrigation Programme, the Morocco Forest Strategy and the Generation Green 2020-2030 Strategy. In addition, it identifies the link between the NAP and NDC with the project's general objective. CR11: Kindly provide a more comprehensive table listing, ensuring the following: (i) Specific name of the plan/strategy and years of implementation (including the link to the document as hyperlink in the strategy name), (ii) Main objective of the identified strategy, (iii) Explain the relevance to the proposed project, including its alignment with the existing plan or strategy. A suggested structure is: 'The proposed project is aligned with [Plan XX], under [Specific Action XX], contributing to [Outcome XX].'" CR12: Please include any other sectoral plan/strategy related to the proposed project, including the ones related to water, agriculture or food security, health, and biodiversity. January 5, 2026

Response: Pending

Secretariat: CR11: Cleared. Table 5 (page 26-27) provides information requested in i, ii, and iii. i. Provides name and years, and reference to strategy name ii. Provides objectives iii. Explained relevance, using suggested format NOTE2: Table 5 (pages 26-27) provides reference to plan/strategy for most but not hyperlink to strategy name. Kindly add hyperlink. CR12: Cleared. Strategies included overall consolidation efforts to promote sustainable oases management (water use, agriculture/energy programs, food security), per first paragraph, section D Part II (pg. 25). May 11, 2026

Response: Pending

Secretariat: NOTE2: Cleared Hyperlinks were added. June 23, 2026

Response: Not Cleared

Secretariat: CR12(re-opened): Please address the following in Table 5: 1. Review and include national strategies focused on reducing gender gaps. 2. Include sectoral plans relevant to the project, such as those related to agriculture, for example. 3. Remove the 2021 NDC, since only the most up-to-date version (NDC 3.0) needs to be included. August 13, 2026

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

Response: Pending

Secretariat: Unsure. The concept note identifies several national regulations related to water, soil protection, sustainable development of palm groves, among others, and how they are relevant to the proposed project as described in Part II.E (pages 28 – 30), However, more specific information is required for compliance. CAR4:

Kindly ensure that, for each identified standard, Table 2 include the following information: (i) The scope and relevance should be described specifically. For example, instead of stating “Ensures preservation of agricultural soils and prevention of erosion,” please clarify whether these are minimum requirements or standards for each type of preservation. (ii) How it relates to the proposed project should be specified, clearly identifying the outputs that will be required to ensure compliance with the identified standard. (iii) The project’s compliance status. In the case that compliance is required, please include the steps needed to comply with it. In addition, please ensure the table listing is comprehensive. January 5, 2026

Response: Pending

Secretariat: CAR4: Cleared. Table 6 (page 28-31). provides the information requested in i, ii, and iii. List is comprehensive, i. Scope and relevance is specific enough ii. Connects to specific project outcomes iii. Provides compliance approach May 11, 2026

Response: Not Cleared

Secretariat: CAR4(re-opened): Please address the following in Table 6: 1. Change the title of the last column to “Steps to be taken to ensure compliance.” This column should identify the main steps required to ensure compliance, together with the institutions responsible for ensuring that compliance takes place (for example, the institutions responsible for issuing sectoral permits). 2. Remove the last row referring to the ESP and incorporate this information into the text preceding the table, since, strictly speaking, the ESP does not constitute a national standard. August 13, 2026

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

Response: Pending

Secretariat: Yes. However, additional information is required. Part II.F (pages 30 – 32) shows a table listing of all relevant projects with a description of them, potential synergies, and a justification for no duplication. The listing described four projects: (i) Climate changes adaptation project in oasis zones; (ii) Revitalising Oasis Agro-ecosystems through a Sustainable, Integrated and Landscape Approach in the Draâ-Tafilalet Region; (iii) Sustainable management of oasis ecosystems in Morocco project; and (iv) Development Project of Saffron and Date Palm in the region of Draa Tafilalet and Souss-Massa. However, lessons learned are not included and synergies could be expanded. CR13: Kindly include, for each project identified in Table 13, the following: (i) Lessons learned (ii) Expand on the synergies with the proposed project. Please ensure the table listing is comprehensive. January 5, 2026

Response: Pending

Secretariat: CR13: Cleared. Information requested is now integrated into table 7 (pg. 32-33). The table includes lessons learned and synergies. May 11, 2026

Response: Not Cleared

Secretariat: CR28(NEW): Please indicate in Table 7 the outputs in which the lessons learned from each of the cited projects are reflected. Please also ensure that the list of projects reviewed is comprehensive. August 13, 2026

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

Response: Pending

Secretariat: Unsure. The proposed project describes a fourth component that encompasses all knowledge and learning activities; however, it is not clear whether this actually constitutes a separate component. CR14: Kindly clarify if learning and knowledge management activities correspond to component 4. Please see CR7. CR15: Kindly include details to respond to: • More details of the specific activities, including the institutions involved, and main goals. For example, the policy briefs will be about what subject, or the demonstration sites will be focused on what matter. • who will be responsible for tracking the experiences gained, how this will be done, and when the tracking will take place (the arrangements needed). • how the knowledge generated will be sustained after the project concludes. January 5, 2026

Response: Pending

Secretariat: CR14: Cleared. Section G, page 33-34 is consistent with description of Component 4 in pages 18-19. It is not said explicitly CR15: Cleared. Details on institutions involved, who is tracking and sustainability are included, per section "Component 4", pages18-19. May 11, 2026

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

Response: Pending

Secretariat: Yes, However, additional information is required. Initial consultations were conducted through workshops in Draa Valley. The consultative process has included local authorities, local population, and stakeholders. However, concrete information about the workshops conducted, including gender considerations, is not provided in the concept note. CR16: Kindly provide details on the workshops conducted in Part II.H, (pages 33 – 34) Table 4, as follows: • Indicate the composition of the participants who attended each workshop (disaggregated by gender), with some background information, to verify if marginalized and vulnerable groups have been consulted. • If so, explain how their concerns were addressed in the project design, emphasizing whether gender considerations were incorporated. • Identify any community groups or leaders involved in high-level planning, or those forming part of the main stakeholder group, to demonstrate that the implementation of the proposed project is participatory in nature • Specify which representatives participated in each stakeholder consultation, including the women's organizations mentioned on page 33. January 5, 2026

Response: Pending

Secretariat: CR16: Not Cleared. Part II, H (pg. 34) mentions two consultations. However please address the following: 1. Consultation 1: There is no information of the number of people that attended, or group composition for first consultation, nor a concrete explanation on how recommendation was implemented. 2. Consultation 2: Information for the second consultation is in 38-page-Annex 1. Annex 1 has information on attendance number and group composition (pg 19-30, Annex1); groups for women and youth to address their feedback (recommendation in pg. 8-9, Annex 1); it has concrete explanations on how concerns were implemented. 3. No leaders or community groups were identified to help demonstrate inclusion NOTE3: Please note that concept note documents should not exceed 50 pages, including annexes. Concept Note + Annex 1 = 81 pages. Please incorporate relevant information of annex 1 into concept note. May 11, 2026

Response: Pending

Secretariat: CR16: Cleared Concerned were addressed: 1. Consultation 1: the proposal now makes clear that the first consultation was a field assessment, not a structured consultation. 2. Information second consultation is now incorporated into the proposal (section H, pg. 33) 3. Second consultation mentions groups that were consulted: representatives of ORMVAO technical services, local authorities, AUEAs, smallholder farmers, cooperatives, women's cooperatives, youth groups and transhumant pastoralists. (pg. 34) NOTE3: Unsure Information from the Annex was incorporated into the proposal. There is a link to the Annex. (Explanation given by IE: The revised concept note now complies with the 50-page limit, including annexes. We reduced the document by integrating the most relevant information from Annex 1 into the main concept note and replacing lengthy annex materials with links to key supporting documents.). June 23, 2026

Response: Not Cleared

Secretariat: NOTE3: Cleared. The document, including annexes, is now 50 pages long, and the information relevant to the consultation process that was previously contained in the annex has been incorporated into the main document. CAR19(NEW): Please summarize the information contained in paragraphs 124–129 (pages 33–34) into two paragraphs and incorporate the remaining information into Table 8. The structure of the table should be revised to show, among other things: 1. The consultation date (one row per consultation). 2. The composition of participants, disaggregated by sex and vulnerable communities. 3. Topics discussed and key considerations. 4. How the feedback received was integrated into the project design, explicitly indicating the output that responds to the concerns raised by stakeholders. CAR20(NEW): Please indicate whether additional consultations will be conducted throughout the project. August 13, 2026

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

Response: Pending

Secretariat: Unsure. Part II Section I (pages 35 to 36) of the concept note provides a broad explanation on the full cost of adaptation reasoning, providing scenarios with and without the AF funding for components 1 and 2. However, it does not provide information about additional funding, and how outputs and outcomes of the project will be secured. CR17: Please clarify at Part II.J how the resources requested from the Adaptation Fund, through the outcomes and activities proposed, will be able to effectively deliver on its objectives, for each component of the proposed project. CR18: Kindly clarify whether the project requires co-financing, and if so, how all outputs and outcomes will be achieved regardless of that. January 5, 2026

Response: Pending

Secretariat: CR17: Cleared. Resource requested explained for each of the components in section Part II, J, pages 37-40 CR18: Cleared. Explained that there is no need of cofinancing, per pg. 37 (Part II, section I, last paragraph). May 11, 2026

Response: Pending

Secretariat: CR17(NEW): At Part II Section I, at the sub-section "scenario with FA project", please delete the FA reference to the Adaptation Fund, this should be AF. June 23, 2026

Response: Not Cleared

Secretariat: CR17(NEW): Not cleared. One of the references to "FA" has been corrected (paragraph 145, page 38), but "scenario with project" still needs to be replaced with "scenario with AF project" in paragraph 142, page 37. CR29(NEW): Please justify the funding requested for Components 3 and 4. Part II.I currently provides a

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

Response: Pending

Secretariat: Yes, However additional information is required. Part III A (pages 45 – 47) presents the table showing the alignment of the Project Objectives and Outcomes with the AF Results Framework. However, there are inconsistencies between this table and the Project Components and Financing Table. In the latter table there are 4 Outcomes associated with each of the Components, while in the Alignment Table only has three outcomes. CAR5: Please ensure the following information is included in the table at Part III.A: • All output and outcomes indicators are SMART. • Please ensure consistency between the Expected Outcomes of the project and the Outcomes in the Adaptation Fund Strategic Results Framework as outlined in the updated AF Results Framework (nov 2025). January 5, 2026

Response: Pending

Secretariat: CAR5: Not Cleared Table 10 is now consistent with project objectives and components in page 8. There is also consistency between proposal components and AF outcomes. Objectives and outcomes are SMART, per table 10, pg 44-45. However, please address the following; 1. Table 10 (pg 44-45), check grant amount to Objective 1 which should be 12,400,000.00 and not '12 140 0000,00'. 2. Please remove the commas from the figures 3. Please ensure that the budget amounts are as per the output/outcome indicator values in the grant amount column. 4. Not clear how grant amounts were generated for proposal objectives. May 11, 2026

Response: Pending

Secretariat: CAR5: Not Cleared Most corrections to Table 10 (pg. 45) have been made however there are still a few more issues to clarify. 1. Not cleared Amount corrected; however, the sum of the objective budgets do not add to 16, 718,894. This should be the same for the output (bottom part of the table). 2. Cleared 3. Cleared 4. Not cleared Still not clear. June 23, 2026

Response: Not Cleared

Secretariat: CAR5: Cleared. 1. The grant amount at both the outcome and objective levels in Table 10 (pages 44–46) is now equal to USD 16,718,894. 2. Paragraph 171 (page 46) has been added as an explanatory note regarding the calculation of the grant allocations. In addition, an annex (page 50) has been added providing details of the unit costs for each activity included under the outputs. CR31(NEW): Please ensure consistency between the AF outcomes identified in paragraph 170 (page 44) and those presented in Table 10. CAR21(NEW): In table 10: 1. Please remove the unit of measurement from all indicators and ensure that the indicators are SMART. Please note that "Number of hectares of oasis ecosystems and palm groves under improved risk reduction and climate-resilient management" is too general and does not specify the assessment period. 2. Please, replace "Total outcome level grant amount" with "Total output level grant amount" in the last row. August 13, 2026

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

Response: Pending

Secretariat: Yes. However, additional information is requested. Part II J (pages 36 – 38) indicates that the project seeks to sustain its benefits through the involvement of existing institutions (at the central and local levels) and agreements/contracts with stakeholders. However, there is no mention of regulations and resources, and therefore, it is not clear how the project will be sustained in the long run, nor if replication and scaling up will be able to achieve. CR19: Kindly identify the adaptation benefits that can be sustained after this project ends and explain if this can be replicated and/or scale up. CR20: Kindly explain the arrangements (for example, financial, social, regulatory, institutional, economic, environmental) to achieve on the sustainability and maintenance of the project. For example, at the institutional level for component 1, the proposal stated: “Community-based natural resource management committees embedded in municipal development plans”. Is there any agreement previously signed to ensure this? January 5, 2026

Response: Pending

Secretariat: CR19: Cleared. Sustainability concerns were answered in pg. 37-40. Replication and scaling up concern addressed in pg 40 and linked to component 4 of the proposal CR20: Cleared. Proposal explains sustainability at institutional, financial regulatory, governance, technical and social level, per Part II, J, pages 37-40. May 11, 2026

Response: Pending

Secretariat: CAR18(NEW): 1. Please ensure that the grant amount presented at Part III, Section A an Table 10 are presented at the indicator level for example amount for indicator 4.1 should be separated from amount associated with indicator 4.2 etc. 2. At part II Section B at the end of paragraph 1 please insert alignment with the AF outcome areas identified in Part III Section A, Table 10. June 23, 2026

Response: Not Cleared

Secretariat: CAR18(NEW): 1. Cleared. Table 10 (pages 44–46) now presents the grant amounts at the indicator level. 2. Not cleared. Please include the exact wording of the AF outcomes with which the project is aligned. Please ensure consistency with the AF outcomes identified in Table III.A (see CR31(NEW)). CR30(NEW): Please clarify whether any preliminary arrangements are in place to ensure the project’s financial sustainability. For example, in paragraph 151 (page 39), please indicate whether the municipal budget allocations have already been discussed with the relevant authorities. August 13, 2026

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

Response: Pending

Secretariat: No. Part II K (pages 39 – 44) of the proposal has identified all potential risks and impacts, but they are not substantiated. For the concept note, the ESP overview should start by identifying potential risks, even if the project aims not to affect issues related to the principles. The Initial Gender Assessment is not included, and the proposal do not elaborate on the gender-specific context in the Draa oases. CAR6: Please review the Table of Environmental and Social Principles and ensure the following: • Describe all potential impacts (direct, indirect, transboundary and cumulative) and risks that could result from the project. • Identify the magnitude of the risks and impacts. Risk should describe as: “There is a risk” and should be accompanied by mitigation plans. For more information, please visit AF’s ESP guidance: https://www.adaptation-fund.org/wp-content/uploads/2016/07/ESP-Guidance_Revised-in-June-2016_Guidance-document-for-Implementing-Entities-on-compliance-with-the-Adaptation-Fund-Environmental-and-Social-Policy.pdf • Kindly leave a check mark in the second column ‘No further assessment required for compliance’ if no further assessment and leave blank if an

assessment is to be conducted. No text should be included in the second column. • Align the titles of the columns to the template accordingly. • Please note that principles 1, 4 and 6 always apply. CAR7: Please include an Initial Gender Assessment. See CAR3. January 5, 2026

Response: Pending

Secretariat: CAR6: Cleared. Table 9 includes potential impact, and risk, and its magnitude. It includes assessment of 16 principles, and check mark if not further assessment is needed, per part II, K, pg. 40-43 CAR7: Not Cleared. Incomplete Gender Assessment in Concept Note. There is information about gender assessment on page 35 but this is incomplete. See also CAR3. May 11, 2026

Response: Pending

Secretariat: CAR7: Cleared Gender Assessment was revised (pg 34). See CAR3. June 23, 2026

Response: Not Cleared

Secretariat: CAR6(re-opened): Please address the following in Table 9: 1. Remove the checkmarks from Principles 1, 4, and 6, as these principles always apply. 2. Strengthen the description of the risks identified under each principle. August 13, 2026

Resource Availability

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

Response: Pending

Secretariat: Yes. The balance remaining under Morocco's country cap is USD 30,030,000. January 5, 2026

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

Response: Pending

Secretariat: Yes. As per information provided in Table of Project/Programme Components and Financing, IE costs are 8.5% (USD 1,566,820) of the Total Project/Programme Budget. In addition, numbers are rounded to whole figures and are consistent throughout the proposed project. Regarding the PFG, it requests an amount of USD 150,000 and clarifies that it will be executed by the ORMVAO. It also includes an IE fee of USD 11,000 (7.3%). January 5, 2026

Response: Pending

Secretariat: CR2(NEW): Please confirm if the PFG will be executed by the ORMVAO. May 11, 2026

Response: Cleared

Secretariat: CR2(NEW): Cleared The PFG clarifies that ORMVAO will execute the PFG. June 23, 2026

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

Response: Pending

Secretariat: Yes. As per information provided in Table of Project/Programme Components and Financing, Execution costs are 9.3% (USD 1,714,286) of the Total Project/Programme Budget. In addition, numbers are rounded to whole figures and are consistent throughout the proposed project. January 5, 2026

Eligibility of IE

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

Response: Pending

Secretariat: Yes. ADA is an accredited NIE. Accreditation Expiration Date: 9 September 2029. January 5, 2026

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme: *Strengthening the Resilience of Oasis Ecosystems and Improving the Adaptive Capacity of Communities in the Draa Basin to Climate Change*

Country: *Morocco*

Thematic Focal Area: *Water Management, Agriculture*

Type of Implementing Entity: *National Implementing Entity*

Implementing Entity: *Agricultural Development Agency (ADA)*

Executing Entities: *Office Régional de Mise en Valeur Agricole d'Ouarzazate (ORMVAO)*

Amount of Financing Requested: *20,000,000 (in U.S Dollars Equivalent)*

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

Amount of Requested financing for PFG: *150,000 (in U.S Dollars Equivalent)*

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

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

Stage of Submission:

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

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

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

4C	Climate Change Competence Center of Morocco
ABH	Basin Agency (ABH-Draa)
ADA	Agricultural Development Agency
AF	Adaptation Fund
ANAPEC	National Agency for the Promotion of Employment and Skills
ANDZOA	National Agency for the Development of Oasis Areas and Argan Trees
ANEF	National Agency of Water and Forest
AUEA	Agricultural Water Users Association
CRI-DT	Regional Investment Center of Draa-Tafilalet
CRJEA	Regional Center for Young Agricultural and Agri-Food Entrepreneurs
ENAM	National School of Agriculture of Meknes
ESMF	Environmental and Social Management Framework
EWS	Early Warning System
GHG	Greenhouse Gas
HCEFLCD	High Commission for Water and Forests and Desertification Control
IAV Hassan II	Hassan II Agronomic and Veterinary Institute
INRA	National Institute of Agronomic Research
IPCC	Intergovernmental Panel on Climate Change
INDH	National Initiative for Human Development
MEKM	Monitoring, Evaluation and Knowledge Management
NDC	Nationally Determined Contribution
NSSD	National Sustainable Development Strategy
ONCA	National Office of Agricultural Advisory
ORMVAO	Regional Agricultural Development Office of Ouarzazate
PC/DGPC/M	Civil Protection Services / Directorate-General for Civil Protection / Ministry of the Interior
PACCZO	Project for Adaptation to Climate Change in Oasis Zones
PMU	Project Management Unit

Project/Programme Background and Context:

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

1. Morocco is considered as a "climate hotspot," highly exposed to the effects and impacts of climate change. The country has experienced pronounced warming trends since the 1960s, with an average observed increase of 0.2°C per decade, exceeding the global average. Nine of the ten warmest years on record in Morocco have occurred in the last two decades. Precipitation has followed a general downward trend, with increasingly irregular patterns. These changes are expected to increase over the coming decades. Morocco is one of the countries most affected by climate change (CC) and faces extreme weather events with wide temperature variations, leading to persistent droughts in semi-desert plains and floods in coastal plains. These events impact water availability, significantly affecting natural resources, ecosystems, and, above all, people's access to water, whether for drinking or for irrigating agricultural land.
2. **Warming trends:** Morocco's climatic data over the last quarter of a century shows that the country's climate is highly variable, with notable warming trends and rainfall deficits. Overall, the temperature in Morocco, across all seasons, has increased by an average of +0.6 to +1.4°C, depending on the region, over the last 40 years. This increase has been particularly marked since the 1980s and 1990s, a period during which warming became more pronounced as droughts became more frequent. Climate projections based on annual changes in precipitation and average temperatures according to the IPCC's optimistic scenario, RCP 2.6, as revealed in the IPCC's 5th report, that average annual temperatures are projected to rise by 0.5 to 1°C by 2020 and by 1 to 1.5°C by 2050 and 2080, across the entire country.
3. This rise in average annual temperature will be even greater under the pessimistic RCP 8.5 scenario, reaching around 2100: (i) between 5 and 7°C in the south-east of the Atlas Mountains, (ii) between 4 and 5°C in the Mediterranean regions, the Atlantic regions, and the center of the country, and (iii) between 3 and 4°C in the Saharan provinces. The period from 2019 to 2022 was the driest since the 1960s, according to the Directorate General of Meteorology. In 2023, which was also marked by low rainfall, Morocco experienced five heat waves, including an absolute record of 50.4°C in Agadir in August.
4. **Water shortages, drought, and reduced snow cover:** Morocco is one of the most water-poor countries in the world and is rapidly approaching the absolute water shortage threshold of 500 m³ per person per year. According to a preliminary climate and environmental vulnerability assessment, based on a review of reports and analyses by the Intergovernmental Panel on Climate Change, the United Nations and the Moroccan government, the country is in a drought situation¹, with a rainfall deficit of 32% since 2019.
5. Morocco's total water resources are estimated at 22 billion m³, comprising 18 billion m³ of surface water (on average for the available time series) and 4 billion m³ of groundwater. Since the late 1970s, water inflows from surface water have decreased, from an annual average of 22 billion m³ between 1945 and 1978 to an annual average of 15 billion m³ between 1979 and 2018. Between 1960 and 2020, the per capita availability of renewable water resources fell from 2,560 m³ to around 620 m³ per person per year, placing Morocco in a situation of structural water stress (less than 1,000 m³), and rapidly approaching the absolute shortage threshold of 500 m³ per person per year. As a result, pressure on groundwater has increased considerably, reaching a level of overexploitation estimated at almost 30%, especially during dry years. The challenge of water scarcity is compounded by deteriorating water quality, affecting both groundwater and surface water.
6. Morocco is experiencing increasingly recurrent and severe droughts. The country has faced more than forty years of various types of droughts, accompanied by excessive temperature variations, marking the last century. Morocco is heading for a sixth consecutive year of drought. The period from 2019 to 2022 was the driest since the 1960s, according to the Directorate General of Meteorology. In 2023, also marked by low rainfall, Morocco experienced five heat waves, including an absolute record of 50.4°C in Agadir in August. At the same time, Morocco will also see a reduction in snow cover because of climate change. The amount of snow in the mountains will be significantly reduced, resulting in less water stored in the form of snow to feed the springs. According to the latest IPCC assessment report, by 2100, Morocco can expect a 15% or even 20% reduction in precipitation, which will double the amount of available water.

¹In its 5th report, the IPCC emphasized that, for all time horizons, there is a downward trend in annual cumulative rainfall, varying between 10 and 20% and reaching 30% in the Saharan provinces by 2100.

7. **Flooding:** Paradoxically, there will be a very significant increase in stormy rainfall. Due to its geographical location, high variability of rainfall, and its topography, Morocco will experience extreme precipitation events leading to flooding, landslides, and a large amount of sediment carried down rivers. This will further silt up dams and cause massive destruction to various roads and rail infrastructures. Between 2000 and 2021, twenty major flooding events were recorded, causing average direct losses estimated at \$450 million per year. Morocco has developed a disaster risk management (DRM) system based on innovative mechanisms, particularly the “Fonds de lutte contre les effets des catastrophes naturelles (FLCN)”. It was initially created to finance post-disaster reconstruction, then transformed into a mechanism that co-finances investments in disaster risk reduction and preparedness at local level.
8. **Policies for a resilient, low-carbon transition:** Water scarcity could affect almost every aspect of Morocco's future socio-economic development. The increasing frequency and severity of droughts are already major sources of macroeconomic volatility and pose a threat to national food security. Looking ahead, reduced water availability and lower agricultural yields due to climate change could potentially reduce GDP by up to 6.5%.
9. **Rain-fed agriculture** is particularly vulnerable to droughts and water shortages: Despite accounting for 80% of the country's cultivated area and employing most farm workers, climate-induced changes in water availability and crop yields could potentially contribute to the rural exodus of 1.9 million Moroccans (equivalent to 5.4% of the total population) by 2050. The deployment of large-scale hydraulic infrastructures² has been a key factor in Morocco's recent development. This infrastructure has enabled a shift towards more productive crops and nearly doubled real agricultural value added over the past two decades. Morocco has introduced an ambitious water investment plan for the period 2020-2050, known as the “Plan National de l'Eau (PNE)”, aimed at bridging the gap between water supply and demand. The drip irrigation is designed to manage water resources optimally. The situation of the oases of southern Morocco is dramatic, as it is facing a dire situation, exacerbating desertification effects. This results in the degradation, eventual loss, and abandonment of productive ecosystems that play significant social, ecological, and economic roles in the region. In oasis area, water management is a must to be followed to preserve resources. This became even more critical during a period of drought, which reveals the weaknesses in the current nationwide system. The oases are therefore not only the first to bear the brunt of climate change but also represent the country's final frontier against desertification.
10. **Vulnerability of oasis ecosystems to climate change:** Oases are unique socio-agro-ecological systems that have evolved over centuries in arid and desert environments. Traditionally defined as intensively cultivated zones in hyper-arid settings (Lacoste, 1985), they serve as vital hubs of biodiversity, food production, cultural heritage, and climate resilience. According to the FAO (2020), oases provide essential economic, ecological, social, and cultural services across the drylands of the world. In Morocco, these ecosystems are concentrated in the arid zone one of the four major ecological regions of the country including areas such as the Anti-Atlas Dir, the Drâa Valley, Ziz, Dades, Tafilalet, and Figuig. Together, Moroccan oases span approximately 48,000 hectares, representing 15% of the national territory, and support more than 1.7 million inhabitants. Despite accounting for only 1.5% of the country's Utilized Agricultural Area (UAA), oasis zones represent 5.9% of total farms, with population densities in some areas exceeding 700 inhabitants per square kilometer.
11. Environmental diagnostics carried out as part of the Communal Development Plans (CDP)³ for the oasis areas have identified several factors responsible for the deterioration of the oasis environments. These include climatic factors linked to recurrent droughts and the increasing scarcity of water resources.

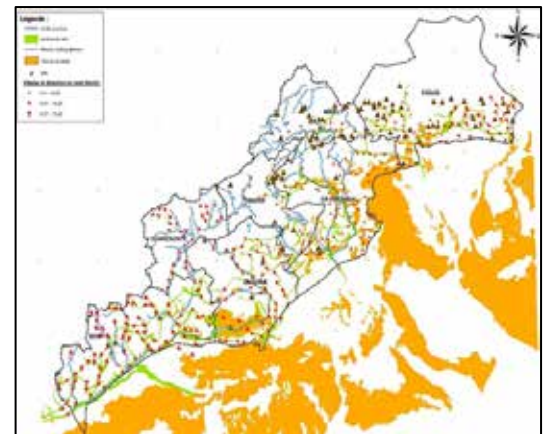


Figure 1: Oasis Areas Distribution and Pastoral Mobility in Morocco⁴

12. **Temperature and rainfall:** Oases are arid areas, characterized by high continental temperatures in summer and very low temperatures in winter, often accompanied by dry winds that create a substantial gap between rainfall and evaporation. The climate in Moroccan oases is continental, with high temperatures between June and September and high evapotranspiration in summer. Due to their geographical location, oasis areas are

² Since the late 1960s, the Kingdom has built more than 140 large dams, increasing its total water mobilization capacity tenfold (from 2 to nearly 19.1 billion m³). It has also developed drip irrigation.

³ In particular, the PCDs of the Ferkla commune, the Akka commune, and the Assrir commune.

⁴ Source: Adapted from Haut-Commissariat au Plan, Morocco, and regional hydrological data.

subject to considerable temperature variation, with extremely hot summers averaging around 42°C. During the hottest months, temperatures frequently exceed 40°C, making the climate very arid and difficult to bear without proper acclimatization. Winters are cold, with an average temperature of around -0.5°C. The temperature difference between summer and winter is significant, reflecting the thermal amplitude typical of desert climates.

13. **On average, the region receives less than 80 mm of rainfall per year, highlighting its scarcity.** Rainfall is not only limited, but also irregular, both temporally and spatially. Nevertheless, certain valleys have microclimates characterized by reduced aridity, attributed to vegetation and the shelter provided by high relief.
14. The region is characterized by periods of highly unpredictable and sometimes severe flooding, which can cause considerable damage. These events result from localized episodes of rain and storms, becoming more frequent as one moves from east to west. The construction of reservoir dams such as Mansour Addahbi on the Oued Drâa and Hassan Addakhil on the Oued Ziz has reduced the risk of these floods and has enabled the main palm groves of the Drâa and Tafilelt to be supplied regularly. However, it has also severely limited the recharging of groundwater, particularly affecting water tables along riverbeds and low-lying areas. While temperatures remain relatively stable from year to year, rainfall shows significant irregularity with high inter-annual variability. The inevitability of floods and droughts has left its mark on people's minds. Farmers live with the expectation of a beneficent rainfall while simultaneously fearing the disruptive impacts of floods and droughts.
15. **Wind:** The oasis zones are influenced by two types of winds: continental winds from the east and south-east, which are hot and dry, and which have a drying and burning effect on the vegetation as they contribute to increasing evapotranspiration. W-NW oceanic winds from the Atlantic and Mediterranean coasts. These winds are generally moderated by the Atlas walls and foothills. The power of the winds increases the evaporative capacity of the atmosphere and activates the transport of sand, which threatens valuable sites (Ksour, roads, farmland, irrigation infrastructure, etc.). This situation gives the area the following overall characteristics: an arid climate and poor soils; intense Saharan influences including wind erosion, sandstorms, drought and desertification; insufficient underground water resources, with high rates of evaporation and evapotranspiration; a remarkable diversity of flora and fauna, characterized by a dominance of endemic species.
16. **Vegetation:** The region features plant formations adapted to semi-desert and Saharan conditions, such as fruticose, acacias (*Acacia raddiana*), esparto grass, and forest species such as juniper and thuja. Oases, primarily dominated by date palms, form microsystems favorable to various crops and livestock. Sparse vegetation cover accentuates soil degradation, wind erosion, and the formation of various dune types.
17. **Livestock:** Livestock is a backbone of oasis livelihoods in Morocco's arid and semi-arid belts, but climate change is eroding that foundation. Recurrent and longer droughts, rising temperatures, and fewer wet days shrink forage availability and surface water, forcing herders to extend grazing ranges, concentrate herds near scarce water points, and face more conflicts over access, patterns observed across southern and eastern Morocco's pastoral zones. These stresses reduce mobility options (a key resilience strategy), depress productivity through heat and feeding stress, and heighten rangeland degradation risks, undermining household incomes and food security. Recent analyses and country submissions report multi-year drought conditions and increasing extremes in oasis areas; sector studies for Morocco and the wider NENA region document how drought and warming intensify livestock vulnerability, while IPCC assessments note that impacts on Moroccan pastoralists hinge on drought exposure and mobility constraints. Together, the evidence points to a clear adaptation need: secure water points, protect/restore rangelands, and support governance that preserves pastoral mobility^{5, 6, 7}.
18. **Water resources:** The region is drained by 5 major wadis: from west to east, the Drâa, the Rheriss and Maïder, the Ziz, and the Guir. With a surface area of 115,563 km² and an average flow rate of 25 m³/s, this region accounts for only around 4% of Morocco's surface water resources and only 5.7% of its total resources. Almost 93% of the resources are mobilized, which means that the hydraulic system in place is operating at full capacity and that the existing balance between population growth and resource use. Uncontrolled population growth or the implementation of large-scale irrigation projects could jeopardize this fragile balance. Out of the 1102 million m³ mobilized in the oasis area, 98% is allocated to agriculture (covering 75% of needs) and

⁵ https://unfccc.int/sites/default/files/resource/Morocco_Submission_TC4.pdf

⁶ <https://documents1.worldbank.org/curated/en/353801538414553978/pdf/130404-WP-P159851-Morocco-WEB.pdf>

⁷ https://menadrought.iwmi.org/wp-content/uploads/sites/44/2020/08/BaselineMorocco_MENAdrought_final.pdf

the rest is reserved for drinking water. Given the scarcity of resources and the difficulty of mobilizing additional supplies, water-saving techniques, particularly in agriculture, need to be implemented as soon as possible, making water conservation a strategic objective for safeguarding oasis areas.



Figure 2: Oasis Zones and Hydrological Basins in Southeastern Morocco

19. **Irrigation system and agricultural production:** The survival of oasis areas depends on the mobilization of water in different ways, traditionally associated with ancestral know-how and complex forms of social organization. This is done either by diverting water from rivers or by pumping groundwater. Water is also mobilized by draining groundwater located upstream of the oasis using underground galleries known as khetaras. The Moroccan oasis is distinguished by the uniqueness and attractiveness of its natural landscape, formed by the small family farms that make up most of the ancient oases.

20. The production system in oases is essentially based on crops and livestock. There are generally three types of crops in oasis areas: Date palms, fruit trees, and underlying crops, including fodder crops, which are of great interest in these farming systems, vegetables and cereals. Fodder crops, notably alfalfa, barley, and maize, in the oases help to improve the structure and fertility of the soil and increase income. Livestock farming is renowned for the very high prolificacy of sheep and goat breeds. Recently, several activities have developed alongside date palm farming, including beekeeping, camel farming, and Saharan eco-tourism.

Oasis agriculture is exposed to the threat of deterioration. A study notes that the combination of predicted changes in temperature and rainfall over the time horizons selected (2015, 2045, and 2075) would result in a significant increase in crop irrigation water requirements (+8% for Ouarzazate and +2% for Zagora). It also recognizes that the water needs satisfaction index (WSI) will be more affected in terms of cultivated land in the oases. Crops such as alfalfa, palm trees, fruit trees, and summer crops will suffer the most in terms of water balance. The oases are in the south and south-west of Morocco, covering around 29% of the country. Six per cent of the population live in oases. Because of their biological, cultural, and architectural diversity, these oases offer exceptionally rich and varied landscapes, perform numerous environmental functions, and provide a multitude of social, ecological, and economic goods and services.

21. **Two-thirds of Morocco's oases have disappeared over the last century.**⁸ The main obstacles to the sustainable development of oases are: (i) unsustainable land and agricultural management practices, including intensive monoculture; (ii) water scarcity and unregulated water management, including unregulated digging of artisanal wells and overexploitation of groundwater; (iii) limited institutional capacity to implement nature-based and geo-dependent oasis management systems and to use participatory methods for integrated oasis management planning; (iv) overexploitation of existing natural resources; and (v) climate change. In 2021, the poverty rate among oasis dwellers was 16%, compared with a national average of 9%. The oasis population is vulnerable to climate change. This population is currently immersed in a vicious cycle combining ecological degradation and impoverishment.

22. In recent years, the oases have undergone profound changes in their characteristics, with a **drop in groundwater levels** (on average between -15 and -20 m) and a **fall in production** (around 34%). But what is most striking is the population trend, which has increased by half in twenty years, against an economic backdrop that is tending to deteriorate, leading to an urban exodus, particularly among young people. Projections for the oasis zones suggest that climate change will have a major **impact on their water resources**. In Zagora area, the threshold of water stress would be reached between 2040 and 2050, and in Ouarzazate, the threshold of water shortage would be reached between 2030 and 2050. The water availability indicator

⁸ ANDZOA. 2016. "COP22: Presentation of the Sustainable Oasis Initiative by the Minister of Agriculture." <http://andzoa.ma/fr/2016/11/15/cop22-presentation-de-linitiative-oasis-durables-par-m-le-ministre-de-lagriculture/>

will continue to rise, resulting in a high level of water stress. Drinking water requirements in the oasis zone are also set to increase from 50% to almost 130% in 2030 and from 67% to almost 380% in 2050, due to population growth. Climate change would thus exacerbate the **deterioration of the water situation** in the oases. The result would be overexploitation of the aquifers, a fall in their piezometric levels, increased costs, and a fall in the flow of springs and khetaras, or even they are drying up. If this were to happen, the oases would disappear in the long term. If confirmed, this disappearance of one of Morocco's most important heritages would have serious social, economic, and environmental consequences. Climate change is expected to exacerbate the risk of fires and diseases (notably Bayoud disease, which destroyed 10 million palm trees in a century)⁹. **Although palm grove fires** are much less deadly than most other natural disasters, they are no less dangerous and have a real economic and environmental impact, given the importance of the date palm in the survival of the oasis ecosystem and in maintaining its population. Each fire attacks an average of 0.6 ha and affects 75 date palms: For example, 35,905 date palms were burnt in the province of Tata in 2018 as a result of 30 fires, giving an average of 1,197 palms burnt per fire (a figure well above the average), bearing in mind that 19,500 palms were affected by a single fire in the Aguerd oasis on 09/07/2018 over an area of 65 ha, not to mention the damage caused to infrastructure and the resources mobilized to extinguish the fire.

23. **Project area:** The project's area includes the oasis ecosystems belonging to the ORMVAO's action zone, which encompasses the greater part of the Draa hydraulic basin (the Upper Draa and Middle Draa sub-basins) and the upstream part of the Maider sub-basin within the Ziz-Ghris basin.



Figure 3: Map showing the Draa Bassin, cities and main protected areas (UNEP-WCMC and IUCN, 2025)

24. The oases of the Draa basin are very fragile ecosystems and are currently facing severe constraints due to climate change, aggravated by demographic pressure. The target population is among those most affected by the effects of "CC" climate change in Morocco. The Draa oases are very fragile ecosystems and are currently facing multiple obstacles and risks due to the combined impacts of climate change and human factors. The area is made up of the upper Draa and Middle Draa zones, encompassing 3 provinces (Ouarzazate, Zagora, and part of the province of Tinghir). The main constraints and obstacles observed and identified include Water stress and scarcity, groundwater salinity, flooding and violent floods, soil degradation and erosion, degradation of palm groves, agricultural and social infrastructure, forests, rangelands, and silting of dams.
25. **Water stress:** the water situation is very alarming due to the combined effect of climate change and management methods based on excessive use of this scarce resource. Excessive pumping of groundwater in the Skoura, Nkob, Tazarine, Taghbalte, Fezouata, and Ouhmidi palm groves has led to a drop in the water table and the drying up of certain khetaras.

⁹Bouhlali EDT, Derouich M, Ben-Amar H, Meziani R, and Essarioui A. 2020. "Exploring the potential use of bioactive plant products in the management of *Fusarium oxysporum* f. sp. *albedinis*: the causal agent of Bayoud disease on date palm (*Phoenix dactylifera* L.)". Beni-Suef University Journal of Basic and Applied Sciences. 9(1): 1-9.

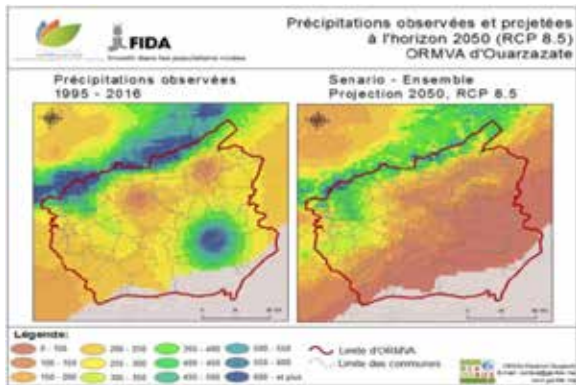
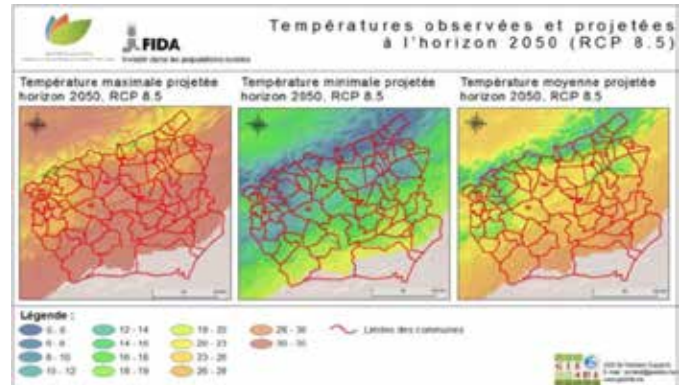


Figure 4: Observed and projected precipitation map for 2050, RCP 8.5



(ABH), local pastoral associations, and municipal authorities to ensure technical feasibility, community ownership, and equitable access.

29. **Degradation of palm groves:** In addition to water shortages, palm groves are increasingly being abandoned due to the spread of diseases and pests. Bayoud disease, caused by the soil-borne fungus *Fusarium oxysporum* f. sp. *albedinis*, remains the most serious threat, having destroyed more than two-thirds of the date palms in the project area. All traditional palm groves in the Draa Valley, Maïder, Skoura, Tarmigt, Ghassate, and Ouhmidi are considered potentially affected. Unfortunately, the most prized varieties, Majhoul, Bouffegous, Bouskri, and Jihel, are also the most susceptible.
30. The primary factor contributing to disease spread is the use of communal canal irrigation in older groves. As the pathogen can persist in the soil and move between palm roots via wet, interconnected soils, these communal irrigation systems inadvertently facilitate its rapid spread¹⁰. In contrast, newer plantations utilizing localized (drip) irrigation and individually managed root zones have remained free from Bayoud, underscoring the protective role of targeted water management.
31. Climate change further compounds this problem by increasing thermal stress and heat-induced vulnerability of palms, potentially accelerating the pathogen's growth cycle and reducing the trees' natural defenses. The disease symptoms appear quicker under water stress conditions and *Fusarium oxysporum* f.sp. can persist in conditions up to 28°C^{11,12}. Although direct local studies are limited, global modeling indicates an increased risk of *Fusarium* outbreaks under future warming, especially in regions highly conducive to palm cultivation¹³.
32. The proposed project will integrate key control strategies recommended for contaminated areas, including the adoption of localized irrigation systems to reduce waterborne pathogen spread (Activity 3.2.1), rehabilitation of degraded khattaras and seguias with improved water management infrastructure (Activity 1.1.3 and Activity 3.2.2), and targeted removal of infected trees (Activity 1.2.1). In parallel, it will promote the planting of resistant varieties in new or rehabilitated plots (Activities 3.1.1) and provide capacity-building for farmers on disease prevention, resistant cultivar selection, and improved agronomic practices (Activities 3.2.1–3.2.4).
33. **Women at the heart of oasis ecosystems:** In oasis areas, women are particularly exposed to the consequences of climate change (desertification, arid climate, water shortages, etc.). The effects of dwindling natural resources and environmental stress affect oasis women more than men. Indeed, the already established inequality and unequal access to production factors (water, land, capital, etc.) are exacerbated by the difficulties associated with climate change. To cope with these disruptions, women are learning and developing new skills and strategies to adapt to their oasis environment.
34. Around 1.1 million women live in oases, representing 51% of the total oasis population. A significant 61% of these women live in rural areas, while the remaining 39% live in urban areas. Forty-seven per cent of oasis women are illiterate. In contrast, 89% of oasis girls (aged between 7 and 12) have access to primary education. The employment rate for oasis women is just 14.4%, which is more an indication that the household, agricultural, and livestock work they do is undervalued than their actual contribution. Of the active population, only 17% (96,633 women) are engaged in working life. Oasis women face many obstacles to achieving higher social status, including the cultural rules of oasis society, high illiteracy rates, limited access to education, restricted land rights, and limited access to the means of agricultural production, including financial resources. They are also excluded from decision-making, both within the home and in the public sphere, and are under-represented in paid employment.

Project/Programme Objectives:

List the main objectives of the project/programme.

General and Specific Objectives

35. The overall objective of the project is to strengthen the climate resilience and adaptation capacity of oasis

¹⁰ <https://www.laboasis.org/date-palm-diseases/>

¹¹ Ghaemi A, Rahimi A, Banihashemi Z (2011) Effects of water Stress and *Fusarium oxysporum* f. sp. *lycopersici* on growth (leaf area, plant height, shoot dry matter) and shoot nitrogen content of Tomatoes Under Greenhouse Conditions. Iran. Agricultural Research 29: 51-62.

¹² Saremi H (2000) Plant Diseases Caused by *Fusarium* Species. Jihad Daneshgahi 4: 160.

¹³ Shabani F, Kumar L (2013) Risk Levels of Invasive *Fusarium oxysporum* f. sp. in Areas Suitable for Date Palm (*Phoenix dactylifera*) Cultivation under Various Climate Change Projections. PLoS ONE 8(12): e83404. doi: 10.1371/journal.pone.0083404

ecosystems and local communities in the face of climate change impacts. To achieve the overall objective, the project aims to: (i) enhance water resource management and the adaptive capacity of the hydrological sector, (ii) promote soil and water conservation through nature-based solutions, (iii) improve early warning systems and community capacities for wildfire prevention and response, (iv) develop climate-resilient oasis agriculture while fostering green entrepreneurship around oasis-based value chains, (v) diversify livelihoods and income sources, particularly for women and young people. These objectives were identified through a participatory and inclusive process, involving local stakeholders, with a view to addressing the systemic interactions between people, water, agriculture, and ecosystems in oasis regions.

36. With a total cost estimated at USD20,000,000, the proposed project is structured around four integrated components designed to address the key climate vulnerabilities of oasis ecosystems and strengthen the resilience of local communities:
(i) **Strengthening the adaptive capacity and resilience of the oasis ecosystem**, focusing on integrated water resource management, soil and biodiversity conservation, and wildfire prevention; (ii) **Enhancing the resilience of pastoral ecosystems and livelihoods**, through nature-based solutions, improved livestock infrastructure, and sustainable land management; (iii) **Strengthening community resilience and diversifying socio-economic activities**, with a focus on resilient oasis agriculture, green entrepreneurship, and the empowerment of women and youth; and (iv) **Strengthening adaptive management and replication** through effective knowledge generation, sharing, and learning.
37. The **Agence pour le Développement Agricole (ADA)** is the **Implementing Entity (IE)**, accredited by the Adaptation Fund to provide fiduciary oversight and ensure alignment with Fund requirements. The **Office Régional de la Mise en Valeur Agricole d'Ouarzazate (ORMVAO)** serves as the **Executing Entity (EE)** responsible for the day-to-day implementation and coordination of activities at the regional and local levels. A diverse set of stakeholders will be engaged throughout project implementation to ensure cross-sectoral coordination, ownership, and sustainability of outcomes. These include: **Agence Nationale pour le Développement des Zones Oasiennes et de l'Arganier (ANDZOA)**¹⁴; mandated to ensure the protection and integrated development of oasis ecosystems and Argan groves; also, the recipient of a prior Adaptation Fund-supported project¹⁵; **Agence du Bassin Hydraulique de Draa Oued Noun - Délégation de Draa (ABH-Draa)**: responsible for regional water planning and management, contributing to water governance and hydrological resilience; **The High Commission for Water and Forests, and Desertification Control – Provincial Directorates of Ouarzazate and Zagora** that oversee forest and watershed management, including fire prevention and reforestation efforts; **Ministry of Tourism, Crafts, Air Transport, and Social Economy – Provincial Delegation**, which supports the promotion of climate-resilient tourism and value addition for local craft products, especially led by women and youth; **Civil Protection Services** that ensure emergency preparedness, early warning, and rapid response, for fire and flood events; **Local Authorities** to facilitate local governance, administrative coordination, and alignment with local development plans; **Agricultural Water User Associations (AUEAs)** that represent farmers in participatory water management and are key partners in the operation and maintenance of collective irrigation systems; and **Provincial Directorate of Agriculture (DPA)**, which falls under the Ministry of Agriculture, Maritime Fisheries, Rural Development, and Water and Forests, and supervises and provides technical support for maintenance at the provincial level.
38. Project implementation will follow a collaborative and contractual approach involving all key stakeholders in the target area. This approach is designed to foster synergies among existing initiatives, optimize the use of available resources, and ensure the sustainability and long-term impact of project interventions.

Project/Programme Components and Financing:

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

Table 1: Project Components, Expected Outputs and Outcomes, and Budget Allocation

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
Component 1: Strengthening the adaptive capacity and resilience of the oasis	1.1. Water infrastructure rehabilitated and climate-resilient water access systems established	1. Strengthened resilience of oasis ecosystems to climate hazards through integrated natural resource	10,570,000

¹⁴ National Agency for the Development of Oasis Areas and the Argan Tree

¹⁵ This is the project to adapt to climate change in oasis zones -PACCZO

ecosystem	1.2. Wildfire prevention, risk reduction and early-warning measures established	management and enhanced wildfire prevention	1,390,000
	1.3. Local wildfire volunteer brigades trained, equipped and operational		180,000
Component 2: Enhancing the resilience of pastoral ecosystems and livelihoods	2.1. Climate-resilient water points and livestock infrastructure established for pastoral communities	2. Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions	1,200,000
	2.2. Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted		1,200,000
Component 3: Strengthening community resilience and diversifying socio-economic activities	3.1. Climate-resilient organic farming support services and value-chain activities delivered	3. Strengthened resilient oasis agriculture and economic empowerment of local communities	350,000
	3.2. Training and capacity-building services for farmers and local organizations delivered		933,894
	3.3. Youth- and women-focused agricultural entrepreneurship and employment support services provided		380,000
4. Strengthening adaptive management and replication through effective knowledge generation, sharing, and learning	4.1. Project knowledge management system and knowledge products established and operationalized	4. Enhanced knowledge management and learning for informed decisions, adaptive management, and replication of good practices.	165,000
	4. 2. Knowledge-sharing and adaptive management mechanisms established and functioning		350,000
5. Project/Programme Activities cost			16,718,894
6. Project/Programme Execution cost			1,714,286
7. Total Project/Programme Cost			18,433,180
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			1,566,820
Amount of Financing Requested			20,000,000

Projected Calendar:

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

Table 2: Project/Programme Implementation Timeline and Key Milestones

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

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Describe the project/programme components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience. For the case of a programme, show how the combination of individual projects will contribute to the overall increase in resilience.

39. The overall objective of the proposed project is **to strengthen the resilience and adaptive capacity of oasis ecosystems and vulnerable communities to the impacts of climate change**. The project comprises four interrelated and complementary components that together form an integrated and ecosystem-based adaptation strategy tailored to the specific vulnerabilities of oasis regions: **(i) Strengthening the adaptive capacity and resilience of oasis ecosystems; (ii) Enhancing the resilience of pastoral ecosystems and livelihoods; (iii) Strengthening community resilience and diversifying socio-economic activities; and (iv) Strengthening adaptive management and replication through effective knowledge generation, sharing, and learning.**
40. The project adopts an **ecosystem-based approach**, grounded in integrated and participatory management of natural resources. This approach considers both the biophysical integrity of the oasis ecosystem and the socio-economic well-being of local populations, particularly women and youth, who are central to the system's sustainability and the most exposed to climate risks. Building on this approach, the project will implement a set of concrete, context-specific adaptation activities that respond directly to the identified climate risks and vulnerabilities of oasis regions. These interventions are designed to strengthen both ecosystem integrity and community resilience by promoting sustainable natural resource management, nature-based solutions,

disaster risk reduction, and diversified livelihoods. The table below provides an overview of the main adaptation activities, the climate stressors they address, and their expected contributions to enhancing climate resilience across the targeted areas.

Table 3: Concrete Adaptation Actions, Climate Risks Addressed, and Expected Resilience

Concrete Adaptation Action	Climate Risk / Stressor Addressed	Expected Adaptation Benefit
Rehabilitation and development of traditional water infrastructure (khetaras, seguias, recharge thresholds)	Increasing drought frequency and water scarcity	Improved water availability and irrigation efficiency; enhanced hydrological resilience
Installation of solar-powered boreholes	Climate-induced reduction in water access	Sustainable and energy-efficient access to water resources during drought periods
Construction of masonry/gabion walls to protect oasis land and infrastructure	Flash floods, erosion of agricultural land	Reduced physical vulnerability of agricultural areas; protection of key ecosystem assets
Establishment of early warning systems and emergency water points for fire response	Increased frequency and severity of wildfires	Enhanced disaster preparedness and reduced damage to palm groves and natural assets
Promotion of nature-based solutions (re-vegetation, use of aromatic/medicinal plants)	Desertification, land degradation, and biodiversity loss	Restoration of degraded land; improved ecosystem services and biodiversity conservation
Promotion of organic and water-efficient farming techniques	Declining soil fertility and water resources	Enhanced agricultural resilience and productivity under climate stress
Strengthening agricultural value chains and market access	Economic vulnerability due to climate shocks	Increased economic resilience and income stability for farmers
Support to women- and youth-led green entrepreneurship and income diversification	Socio-economic vulnerability, lack of livelihood alternatives	Empowered vulnerable groups; diversified livelihoods and improved adaptive capacity
Capacity building of AUEAs and community groups in climate-resilient resource governance	Weak local governance of natural resources	Strengthened local ownership and sustainability of adaptation measures

41. Together, these interventions are designed to develop and scale up a tailored model of climate adaptation for oasis ecosystems. By addressing the structural drivers of vulnerability, such as water scarcity, land degradation, and socioeconomic exclusion, they aim to establish sustainable and replicable pathways toward enhanced resilience, improved food and water security, and inclusive economic empowerment, particularly for women and young people.
42. The project is structured around four mutually reinforcing components, which together aim to address the main climate vulnerabilities affecting oasis ecosystems and the livelihoods of the communities that depend on them. Each component contributes to building long-term resilience through ecosystem-based adaptation, sustainable resource management, and inclusive socio-economic development.

Component 1: Strengthening the adaptive capacity and resilience of the oasis ecosystems

43. This component aims to strengthen the ecological and infrastructural resilience of oasis systems, which are increasingly threatened by the impacts of climate change, including recurrent droughts, flash floods, and wildfires. The intervention adopts an ecosystem-based approach, emphasizing integrated natural resource management, risk prevention, and the active participation of local communities. The component is designed to contribute to **Outcome 1: Improved access to water and strengthened hydrological resilience in oasis areas**. To achieve this, it focuses on three key outputs: Water infrastructure rehabilitated and climate-resilient water access systems established (Output 1.1); Wildfire prevention, risk reduction and early-warning measures established (Output 1.2); Local wildfire volunteer brigades trained, equipped and operational (Output 1.3). Together, these outputs aim to enhance water security, reduce environmental vulnerability, and empower local stakeholders to adapt to and mitigate the climate effects.

Output 1.1: Water infrastructure rehabilitated and climate-resilient water access systems established

44. To address growing water scarcity and strengthen water security, the project will rehabilitate and develop water mobilization infrastructure and aquifer recharge systems. Key activities include:
- Build 4 new diversion weirs and reinforce 6 existing ones in the Draa Valley, to improve water capture and distribution (Activity 1.1.1)
 - Install 30 solar-powered boreholes to support the irrigation of palm groves and reduce dependence on surface water during drought periods (Activity 1.1.2)
 - Restore 30 km of degraded khetaras and seguias, and construct rainwater harvesting and aquifer recharge structures in vulnerable areas (Blida and Tansifte) (Activity 1.1.3). This gravity-based system is more environmentally friendly and allows for more efficient groundwater use.
 - Construct 4 additional recharge thresholds to strengthen groundwater availability (Activity 1.1.4)
 - Build 15 km of flood protection walls (masonry or gabion) to safeguard agricultural land and irrigation

infrastructure (Activity 1.1.5).

45. *The rehabilitation of traditional khetaras and diversion weirs is a strategic response to declining precipitation, more frequent and prolonged droughts, and rising temperatures, which accelerate evaporation, reduce groundwater recharge, and intensify water stress. These changes have led to the deterioration of traditional irrigation infrastructure, threatening the water security of communities. Siltation of weirs and extreme events (flash floods, torrential runoff) further degrade soils and water systems.*
46. *Site selection will be undertaken in consultation with the Water Basin Agency (ABH), Agricultural Water Users Associations (AUEA), farmer cooperatives, and local communities to ensure technical relevance and community ownership. The measures will secure reliable access to water for domestic, agricultural, and pastoral use, alleviate pressure on groundwater resources, prevent desertification, and stabilize oasis agricultural systems. The interventions will directly benefit an estimated 180,000 people (approximately 40% women and 20% youth). Implementation will involve both governmental and non-governmental implementation partners. The Draa Oued Noun River Basin Agency (ABH) will support hydrological planning and monitor construction works. The Draa-Tafilalet Chamber of Agriculture will assist with site identification, act as an interface between farmers and decision-makers, and support maintenance arrangements. The National Agency for the Development of Oasis Areas and Argan Trees (ANDZOA) will contribute to land-use planning and monitoring and evaluation. Local authorities at communal, provincial (CPZ), and regional (CR-DT) levels will be associated with site selection and local coordination. Agricultural Water Users Associations (AUEA) and community-based cooperatives will be involved in validation, operation, and maintenance of the infrastructure.*
47. *Implemented in close coordination with local and regional authorities, water user associations, and community-based cooperatives, this output will contribute to strengthening institutional capacities, promoting inclusive water governance, and enhancing community resilience. The approach will deliver tangible, scalable adaptation results, reinforcing both ecosystem integrity and local livelihoods.*

Output 1.2: Wildfire prevention, risk reduction and early-warning measures established

48. *To address the increasing frequency and severity of wildfires, exacerbated by prolonged droughts, land degradation, and the accumulation of combustible biomass, the project will implement a package of early prevention and firefighting preparedness measures. These interventions are critical for safeguarding palm groves, protecting biodiversity, and maintaining the socio-economic functions of oasis ecosystems:*
- *Clear and maintain 100,000 date palm clusters across the six main palm groves in the Draa Valley to reduce flammable biomass (Activity 1.2.1) by removing plant debris and dried fronds, thereby improving the health and fire resistance of palm trees.*
 - *Establish 20 emergency water points (wells, hydrants, and posts) for wildfire response, particularly during dry seasons (Activity 1.2.2) to ensure a readily available and accessible water supply for firefighting, especially during the driest months.*
 - *Pilot implementation of an early warning and alert system for fire risk management (Activity 1.2.3) to anticipate fire risk and coordinate timely response actions.*
49. *Oasis ecosystems are highly susceptible to wildfire outbreaks due to climate change-induced increases in temperature and prolonged droughts, which create ideal conditions for fire ignition and spread. The accumulation of dead palm fronds and organic debris, combined with limited firefighting infrastructure, heightens the vulnerability of these areas. In addition, reduced access within palm groves delays emergency response, increasing the likelihood of severe damage to both ecosystems and livelihoods.*
50. *This output will be implemented in partnership with the High Commission for Water and Forests and Desertification Control (HCEFLCD), which will provide technical leadership on wildfire prevention and ecosystem management. Civil Protection Services (Firefighters) under the authority of the Directorate-General for Civil Protection of the Ministry of the Interior (PC/DGPC/MI) will support emergency preparedness planning and coordinate response mechanisms. Local authorities (Wilaya, Province, Circles, Royal Gendarmerie, Auxiliary Forces) will facilitate local coordination and security. Palm grove associations, Agricultural Water Users Associations (AUEAs), and community-based organizations managing oasis lands will participate in biomass clearing, site validation, and maintenance of emergency water points, ensuring local ownership and sustainability.*
51. *The output will include the clearing and maintenance of approximately 100,000 date palms across six major*

palm groves, the installation of emergency water points for firefighting, and the pilot deployment of an early warning and alert system for fire. These measures will reduce wildfire risks and protect the ecosystems and livelihoods of more than 40,000 people living in high-risk oasis areas. The interventions will significantly reduce the risk of fire outbreaks and their spread, protecting both natural and socio-economic assets. By improving the health and resilience of palm groves, this output will safeguard agricultural productivity, preserve biodiversity, and secure the livelihoods of thousands of people dependent on oasis resources.

Output 1.3: Local wildfire volunteer brigades trained, equipped and operational

52. *This output focuses on strengthening community-based preparedness and response capacities. It will involve Civil Protection Services, (Firefighters) under the authority of the Directorate-General for Civil Protection of the Ministry of the Interior (PC/DGPC/MI), forestry authorities, ANEF (Regional and Provincial Directorates), local governments, and non-governmental actors such as community associations, women's groups, and youth organizations.*
53. *The project will establish and train local volunteer brigades, combining modern fire-risk management tools with local knowledge. Awareness campaigns and training sessions will be delivered using participatory approaches to ensure strong community ownership and sustainability. To ensure sustainability, effectiveness, and local ownership of wildfire risk management, the project will build strong community-based preparedness systems and foster inclusive awareness campaigns. This will enable communities to act swiftly and effectively when faced with climate change-driven fire risks, protecting both lives and ecosystems. Key activities include:*
 - *Distribute 30 fire management kits to enable first-response teams in targeted areas (Activity 1.3.1)*
 - *Organization of 30 community training and awareness sessions on wildfire risks and natural resource management, accompanied by the installation of 120 preventive signage in high-risk zones (Activity 1.3.2).*
54. *The increasing frequency, intensity, and unpredictability of wildfires in oasis regions are driven by prolonged droughts, rising temperatures, declining soil moisture, and ongoing ecosystem degradation. These conditions demand proactive, locally led solutions that integrate both modern tools and traditional knowledge to reduce risks and strengthen adaptation. The project will deploy integrated, community-based early warning and surveillance systems (EWS) combining modern technologies, such as thermal sensors, drones, satellite imagery, and automated alerts, with indigenous knowledge and traditional fire management practices. The EWS will provide continuous fire-risk monitoring, real-time alerts via multiple channels (SMS, local radio, sirens), and clear, community-agreed protocols for emergency response.*
55. *To ensure strong ownership, over 600 community volunteers will be mobilized and trained, and local firefighting brigades will be established in coordination with Civil Protection Services, Forestry Departments, and local authorities. Special attention will be given to women's and youth participation, ensuring inclusive and gender-responsive risk management. Implementation will involve Civil Protection Services (Firefighters) under the authority of the Directorate-General for Civil Protection of the Ministry of the Interior (PC/DGPC/MI), which will support training, emergency preparedness, and response coordination. Forestry authorities (ANEF) and relevant regional and provincial directorates will provide technical oversight on ecosystem protection and fire prevention. Local governments will facilitate coordination and local implementation. Community associations, palm grove committees, women's groups, and youth organizations will be directly engaged in awareness activities, surveillance, and first-response actions, ensuring inclusive and gender-responsive participation.*
56. *These interventions will significantly enhance local capacity to prevent, detect, and respond to wildfires, protecting approximately 40,000 people living in high-risk zones. Beyond emergency preparedness, this output will contribute to climate adaptation by preventing irreversible losses, safeguarding biodiversity, and preserving critical ecosystem services. It will also strengthen community resilience through participatory governance and ecosystem-based risk reduction.*

Component 2: Enhancing the resilience of pastoral ecosystems and livelihoods

57. *This component focuses on strengthening the ecological and socio-economic resilience of pastoral systems in oasis regions, which are increasingly threatened by climate change impacts such as prolonged droughts, overgrazing, land degradation, and biodiversity loss. The intervention aims to secure and sustainably manage grazing resources, promote climate-resilient livestock practices, and diversify pastoral livelihoods.*

58. The approach combines ecosystem restoration with livelihood diversification to reduce vulnerability while enhancing the adaptive capacity of pastoral communities. It emphasizes the restoration of degraded rangelands, the development of water and fodder infrastructure for livestock, and the promotion of nature-based solutions such as the cultivation and valorization of drought-resistant medicinal and aromatic plants. These interventions will be implemented in close collaboration with pastoral associations, local cooperatives, and municipal authorities to ensure ownership and sustainability. The component contributes directly to **Outcome 2: Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions**, through two interlinked outputs: Output 2.1: Climate-resilient water points and livestock infrastructure established for pastoral communities. Output 2.2: Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted. Together, these outputs will help secure the ecological balance of pastoral ecosystems, reduce the risk of livelihood collapse due to climate shocks, and empower vulnerable groups, particularly women and youth, to access sustainable economic opportunities.

Output 2.1: Climate-resilient water points and livestock infrastructure established for pastoral communities

59. To address the increasing water scarcity and infrastructure deficits affecting pastoral systems in oasis regions, the project will develop and rehabilitate climate-resilient facilities that secure year-round access to water and improve animal welfare. These measures will directly support pastoral livelihoods while reducing pressure on fragile grazing ecosystems. Key activities include:
- Create or rehabilitate 20 solar-powered water points (boreholes, wells, or small-scale pumping systems) (Activity 2.1.1) to ensure a sustainable and energy-efficient water supply for pastoral use.
 - Construction of 10 livestock shelters (Activity 2.1.2) to protect animals from extreme heat and adverse weather conditions, reducing mortality and productivity losses.
60. Designs will integrate solar energy systems to reduce operational costs and greenhouse gas emissions. Infrastructure will be co-designed with pastoral communities to ensure equitable access to resources, minimize conflicts, and enhance long-term sustainability. Community members will receive targeted training in basic operation and maintenance to ensure effective local management and durability of the facilities. Training will be provided to community members on the maintenance of water points and infrastructure, ensuring long-term sustainability. The interventions will: (i) Provide a reliable, climate-resilient water supply for livestock in drought-prone areas; (ii) Improve animal health and productivity by reducing heat stress and dehydration; (iii) Reduce competition over scarce water resources, mitigating conflict between user groups and (iv) Strengthen the adaptive capacity of at least **15,000 pastoralists**, including women engaged in small-scale livestock production. Implementation will involve the Draa–Oued Noun River Basin Agency (ABH) for technical guidance on water resources, local municipalities for site validation and coordination, and a range of non-governmental actors, including pastoral associations, livestock cooperatives, agricultural service cooperatives, women's cooperatives (including those engaged in aromatic and medicinal plants (AMP)), nursery growers, and community-based organizations.

Output 2.2: Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted

61. This output aims to restore degraded oasis and rangeland ecosystems, enhance biodiversity, and diversify local livelihoods by promoting the sustainable cultivation, harvesting, and commercialization of drought-tolerant aromatic and medicinal plants. By integrating ecosystem restoration with value chain development, the intervention addresses both ecological and socio-economic vulnerabilities in pastoral and oasis landscapes. Key activities include:
- Implement land restoration and anti-sand encroachment measures over 1,000 hectares¹⁶ in downstream palm groves to reduce sedimentation in irrigation canals and protect agricultural land from desertification (Activity 2.2.1).
 - Promotion of the cultivation, processing, and marketing of local aromatic and medicinal plants (e.g., thyme, rosemary, lavender, artemisia) adapted to the climatic conditions of upstream palm groves. This will include establishing nurseries, providing seedlings, and training on sustainable harvesting techniques (Activity 2.2.2).
62. Climate change in oasis regions is causing prolonged droughts, land degradation, and biodiversity loss, leading

¹⁶ Oasis farms in Morocco remain very small in scale—approximately 0.5 hectares per producer—and are often highly fragmented, which significantly influences agricultural productivity, resource access, and management practices., https://agritrop.cirad.fr/609734/1/Defis_perspectives_pastoralisme_ovin_20240603.pdf

to the decline of native plant species and the ecosystems they support. Traditional aromatic and medicinal plants, adapted to arid conditions, are increasingly threatened by overharvesting, unsustainable land use, and climate-induced habitat loss. Their degradation undermines local ecological resilience and deprives communities, particularly women, of important livelihood sources. Sustainable cultivation and valorization of these species can simultaneously restore ecosystem functions, conserve biodiversity, and create climate-resilient income streams.

63. Implementation will involve the High Commission for Water and Forests and Desertification Control and the National Agency of Water and Forest (ANEF), regional and provincial directorates for biodiversity conservation, land management, and agricultural and irrigation systems. Women's cooperatives and nursery growers of AMP, agricultural service cooperatives, environmental NGOs, and local communities will be engaged in cultivation, restoration, and processing activities. Private-sector value chain actors will support anti-sand encroachment works, processing, packaging, certification, and market access. Participatory training and business support will strengthen cooperative-led commercialization and quality control.
64. The expected benefits are (i) the restoration of degraded lands, improving soil stability and reducing erosion; the conservation of native plant species and associated biodiversity; (iii) the increased adaptive capacity of communities through sustainable, climate-resilient livelihoods; (iv) the empowerment of women and youth through active participation in plant cultivation and value chain enterprises and (v) strengthened local knowledge systems for biodiversity management and climate adaptation.

Component 3: Strengthening community resilience and diversifying socio-economic activities

65. This component targets the socio-economic drivers of vulnerability in oasis regions by promoting sustainable, climate-resilient livelihoods and empowering vulnerable groups, particularly women and youth, to participate in and benefit from green economic opportunities. It combines support for climate-smart agriculture, value chain strengthening, and entrepreneurship development to create diversified income sources that are resilient to climate shocks. The approach integrates **skills development, business incubation, and market access facilitation** with climate-resilient production systems. By enhancing both the adaptive capacity of households and the resilience of local economies, this component helps reduce dependency on climate-sensitive activities while ensuring that socio-economic development does not compromise the ecological integrity of oasis ecosystems. The component contributes to **Outcome 3: Strengthened resilient oasis agriculture and economic empowerment of local communities** through three interlinked outputs: Climate-resilient organic farming support services and value-chain activities delivered (Output 3.1); Training and capacity-building services for farmers and local organizations delivered (Output 3.2); and Youth- and women-focused agricultural entrepreneurship and employment support services provided (Output 3.3). Together, these outputs will strengthen value chains, improve market integration, and build inclusive local economies that can adapt to climate variability while generating equitable and sustainable benefits.

Output 3.1: Climate-resilient organic farming support services and value-chain activities delivered

66. The output 3.1 aims to promote sustainable, climate-smart agricultural practices in oasis systems, with a focus on organic production, water efficiency, and agroecological diversification. By enhancing productivity while preserving ecosystem functions, it will contribute to both climate adaptation and long-term food security in vulnerable oasis communities. Key activities are related to:
 - Promotion of organic date palm cultivation as part of an agroecological diversification strategy, including training on organic farming techniques, compost production, and integrated pest management (Activity 3.1.1).
 - Support 20 climate-resilient income-generating projects in oasis value chains through small grants of up to US\$5,000 per initiative, accompanied by technical and business support (Activity 3.1.2).
 - Develop of oasis product value chains (Activity 3.1.3), including: improvement of marketing channels for local products as an economic resilience strategy (Activity 3.1.3.a); and valorization and certification of local products to enhance market competitiveness and secure higher incomes for producers (Activity 3.1.3.b).
67. Oasis agriculture faces multiple climate threats, including rising temperatures, reduced water availability, and soil degradation. Traditional farming methods, which rely heavily on water-intensive and chemically dependent practices, are increasingly unsustainable in the face of prolonged droughts and declining groundwater resources. Transitioning to organic and climate-resilient practices will not only conserve water

and soil health but also improve farmers' adaptive capacity and access to premium markets.

68. Activities will be implemented in close collaboration with farmer cooperatives, women's associations, and Agricultural Chambers to ensure local ownership and effective delivery. The National Institute of Agronomic Research (INRA) and the National Office of Agricultural Advisory (ONCA) will provide technical support, training, and extension services. Where feasible, organic certification processes will be supported in partnership with key market actors, including Maroc Datte and the Federation of Organic Agriculture, while linkages with national and international markets will be strengthened to enhance value chain integration.
69. Training programs will integrate climate-resilient practices, efficient irrigation techniques, and biodiversity-friendly production methods. Expected benefits are : (i) Increased adoption of organic and climate-smart agricultural practices in oasis systems; (ii) Improved water-use efficiency and soil health, reducing climate vulnerability; (iii) Enhanced market access and higher incomes for smallholder farmers through value addition and product certification; (iv) Empowerment of women and youth through active participation in value chains; and (v) Strengthened resilience of local agricultural systems against droughts and climate variability.

Output 3.2: Training and capacity-building services for farmers and local organizations delivered

70. This output focuses on building the technical, organizational, and governance capacities of farmers and their representative organizations to adopt and sustain climate-resilient agricultural practices. It also aims to strengthen community-based governance systems for the equitable and sustainable management of natural resources in oasis areas. Key activities include:
- Train farmers through 20 targeted training sessions on water-efficient and climate-resilient agricultural techniques, including improved irrigation and water-management practices (Activity 3.2.1).
 - Provide capacity-building support to 10 cooperatives/EIGs on organizational management, climate-resilient production and access to markets and finance (Activity 3.2.2).
 - Organize 50 training sessions specifically for women and youth to strengthen their adaptive capacities, encourage their active participation in agricultural value chains, and promote gender equality in resource governance (Activity 3.2.3).
 - Facilitate knowledge exchange and peer-to-peer learning on adaptation and resilience between local producers, cooperatives, and institutions (Activity 3.2.4).
71. Climate change impacts, such as prolonged droughts, erratic rainfall, and extreme temperatures, are reducing agricultural productivity in oasis regions. Farmers often lack technical know-how, financial resources, and institutional support to adapt their practices to these new conditions. At the same time, weak governance of water and land resources can lead to overuse, inequitable access, and further environmental degradation. Building capacities in climate-smart production and participatory resource management is essential to sustaining agricultural systems and protecting the natural resource base.
72. Implementation will engage agricultural extension services and AUEAs to provide field-level technical support and strengthen local resource governance. Research and training institutions, including the INRA, the Hassan II Agronomic and Veterinary Institute (IAV Hassan II), the National School of Agriculture of Meknes (ENAM), and Mohammed VI Polytechnic University (UM6P), will contribute to curriculum development, Farmer Field Schools, and demonstration plots. Cooperatives, women's and youth organizations, and the Regional Center for Young Agricultural and Agri-Food Entrepreneurs (CRJEA) will support outreach, inclusion, and entrepreneurship development. The Climate Change Competence Center of Morocco (4C) will facilitate knowledge exchange and ensure alignment with national climate priorities.
73. Indeed, training modules will be co-designed with **agricultural extension services, local cooperatives, and research institutions** to ensure technical relevance and adaptability to local contexts. Farmer Field Schools and demonstration plots will be established to promote hands-on learning and showcase best practices. Special measures will ensure the inclusion of women and youth, such as flexible training schedules and targeted mentorship programs.
74. The expected benefits are : (i) Improved technical capacity of farmers to implement and maintain climate-resilient agricultural practices; (ii) Stronger, better-governed farmer organizations capable of supporting members in climate adaptation; (iii) Greater inclusion of women and youth in decision-making and productive activities; (iv) Enhanced collaboration and knowledge sharing among producers, improving the collective adaptive capacity of the community; and (v) More sustainable and equitable management of water and land resources in oasis regions.

Output 3.3: Youth- and women-focused agricultural entrepreneurship and employment support services provided

75. This output seeks to create new, climate-resilient economic opportunities in the agricultural sector by supporting youth and women to engage in innovative, sustainable, and market-oriented activities. It aims to reduce unemployment, diversify livelihoods, and foster a new generation of entrepreneurs who integrate climate adaptation into their business models. Key activities include:
- Support 20 innovative projects benefiting women, particularly in processing, packaging, and marketing of agricultural products, as well as in climate-smart services such as solar-powered irrigation and sustainable input supply (Activity 3.3.1).
 - Support 20 agricultural employment and self-employment initiatives led by or benefiting youth and women through start-up support, mentoring and technical assistance (Activity 3.3.2).
76. In oasis regions, limited job opportunities, especially for women and youth, combined with climate-related challenges such as water scarcity, soil degradation, and declining agricultural productivity, exacerbate poverty and migration pressures. Supporting climate-smart entrepreneurship in agriculture and related value chains can simultaneously strengthen adaptive capacity, boost household incomes, and enhance the resilience of local economies. Partnerships will be developed with vocational training centers, microfinance institutions, entrepreneurship incubators, and market actors to ensure that trainees can transition from skills development to actual business creation. Selection criteria for supported initiatives will include innovation potential, environmental sustainability, and contribution to climate adaptation. Mentorship programs will link aspiring entrepreneurs with experienced business leaders and technical experts.
77. The project will create new climate-resilient jobs in the agricultural sector and related value chains, with a strong focus on women and youth, who will represent at least 40% and 20% of beneficiaries, respectively. It will strengthen the adaptive capacity of households by diversifying and sustaining income sources through the promotion of sustainable agriculture, value addition to high-value products (dates, medicinal and aromatic plants, Acacia gum, seeds, and honey), and climate-smart services such as solar-powered irrigation.
78. Implementation will be carried out in partnership with vocational training centers, entrepreneurship incubators, microfinance institutions, and market actors. Business training, mentoring, start-up support, and facilitated access to finance will be provided in collaboration with the Regional Investment Center of Draa-Tafilalet (CRI-DT), the National Initiative for Human Development (INDH), and the National Agency for the Promotion of Employment and Skills (ANAPEC). Selection criteria will prioritize innovation potential, environmental sustainability, and inclusion of vulnerable groups, particularly women and youth.
79. Over 3,000 individuals will benefit from targeted training in business development, financial management, marketing, climate risk management, and sustainable resource use, while at least 150 cooperatives, micro, and small enterprises will be created or strengthened. Beneficiaries will also receive coaching, technical assistance, and improved access to microfinance to transform skills into viable businesses. By fostering green entrepreneurship in both agricultural and non-agricultural sectors, such as natural cosmetics, the project will reduce youth unemployment, increase household incomes, and enhance community resilience. This integrated approach will empower marginalized groups to take a leading role in climate adaptation strategies while building a robust local ecosystem for inclusive, climate-resilient economic development.

Component 4: Strengthening adaptive management and replication through effective knowledge generation, sharing, and learning

80. This component aims to institutionalize a robust Monitoring, Evaluation, and Knowledge Management (MEKM) system that supports evidence-based decision-making, adaptive management, and the replication of successful approaches beyond the project's lifespan. By systematically generating, analyzing, and sharing relevant knowledge products, the component ensures that lessons learned and best practices are embedded into project implementation, inform policy dialogue, and guide future investments.
81. The approach combines operational systems for capturing and managing data with interactive learning processes and targeted dissemination strategies. Stakeholders at all levels, from national authorities to local communities, will have access to timely, relevant, and actionable information that enhances transparency, accountability, and long-term impact. Knowledge products will focus on climate-resilient water management, ecosystem-based adaptation in oasis systems, wildfire and flood risk management, pastoral resilience, and

inclusive climate-resilient livelihoods. The component contributes to **Outcome 4: Enhanced knowledge management and learning for informed decisions, adaptive management, and replication of good practices** through two interlinked outputs.

Output 4.1: Project knowledge management system and knowledge products established and operationalized

82. This output focuses on establishing a fully functional MEKM framework, including data collection, analysis, and reporting protocols. Activities will include:
- Developing and operationalizing the MEKM framework (Activity 4.1.1), including standardized tools for tracking climate resilience indicators, oasis ecosystem health, livelihood diversification, gender and youth inclusion, and institutional performance;
 - Producing four policy briefs, covering climate-resilient oasis water governance, ecosystem-based wildfire and flood risk reduction, sustainable pastoral systems, and pathways for scaling up women- and youth-led green livelihoods; eight technical reports, prepared on a semi-annual basis; and five progress and impact reports, comprising four annual reports and one consolidated final report, for national authorities, the ADA, and project partners (Activity 4.1.2). Policy briefs will specifically address topics such as climate-resilient oasis water governance, ecosystem-based wildfire and flood risk reduction, sustainable pastoral systems, and pathways for scaling up women- and youth-led green livelihoods;
 - Maintaining a digital repository of project outputs, such as reports, training materials, and case studies, accessible to all stakeholders (Activity 4.1.3). The repository will be hosted and maintained by ORMVAO to ensure continuity beyond project closure.
83. Implementation will be carried out in partnership with government stakeholders, including the Regional Agricultural Development Agencies (DRA), Regional Agricultural Promotion Agencies (DPA), Regional Councils, Regional Chambers of Agriculture, the National Agency for the Development of Oasis Areas and Argan Trees (ANDZOA), relevant interprofessional federations (dates, livestock, organic farming), line ministries, and local authorities. Non-governmental stakeholders (including local consultants, service providers, Agricultural Water Users Associations (AUEAs), cooperatives, and beneficiary community representatives) will also participate in data generation, coordination, and feedback mechanisms. The Project Management Unit (PMU) hosted within ORMVAO will be responsible for tracking experiences gained across all components. This will be done through regular field monitoring, semi-annual progress reviews, participatory assessments with communities, and annual synthesis reports. Data collection will take place continuously throughout implementation, with formal consolidation at mid-term and project completion.

Output 4.2: Knowledge-sharing and adaptive management mechanisms established and functioning

84. This output ensures that knowledge is not only produced but actively used to improve practices and outcomes. Activities will include:
- Organizing four annual reflection workshops to validate findings, identify gaps, and integrate lessons learned into ongoing activities (Activity 4.2.1). These workshops will focus on adaptive management of water resources, wildfire prevention, pastoral resilience, and livelihood diversification;
 - Facilitating five peer-to-peer learning exchanges among communities on good practices in water management, fire prevention, and livelihood diversification (Activity 4.2.2), including visits to demonstration sites showcasing solar-powered irrigation and sustainable input supply systems, restored rangelands, and organic oasis agriculture;
 - Implement five knowledge-sharing actions, including stakeholder meetings, media activities and online dissemination, to communicate project results, lessons and climate-resilient practices to relevant stakeholders.
85. Implementation will involve, training institutions and research institutions (including ENAM, IAV Hassan II, UM6P, INRA and universities, with technical support from national statistical and sectoral services. Independent evaluators and specialized consulting firms will be engaged for mid-term and terminal evaluations. Community organizations and project beneficiaries will actively participate in participatory monitoring, learning, and feedback processes.
86. The MEL system will include baseline data collection, regular field monitoring, gender- and age-disaggregated indicators, and climate-resilience performance metrics aligned with the project's results framework. Community-based monitoring approaches will be used to capture local-level impacts and lessons learned. To ensure sustainability beyond project closure, the MEKM system, digital knowledge repository, and learning

mechanisms will be institutionalized within ORMVAO and partner institutions. Training materials, policy briefs, and tools will be integrated into existing extension, planning, and training programs, while regional and national stakeholders will be supported to use the generated evidence to inform future adaptation investments and policy frameworks.

Table 4: Summary of Project Activities and Budget Allocation

Outcome	Output	Activity	Qty	Unit Cost (US\$)	Amount (US\$) ¹⁷
Outcome 1: Oasis ecosystem resilience to climate hazards through integrated natural resource management and wildfire prevention	Output 1.1: Water infrastructure rehabilitated and climate-resilient water access systems established	1.1.1 Diversion weirs: 4 new & 6 reinforced (Draa valley)	10	80,000 / weir	800,000
		1.1.2 30 collective solar-powered boreholes for palm-grove irrigation	30	54,000 / borehole	1,620,000
		1.1.3 Rehabilitate khettaras/seguias & recharge works (Blida, Tansifte)	30	130,000 / km	3,900,000
		1.1.4 Aquifer-recharge thresholds	4	500,000 / threshold	2,000,000
		1.1.5 Flood protection walls (15 km masonry/gabion)	15	150,000 / km	2,250,000
	Output 1.2: Wildfire prevention, risk reduction and early-warning measures established	1.2.1 Clean/maintain 100,000 date-palm clumps	100,000	10 / palm clump	1,000,000
		1.2.2 Emergency water points for fire management	20	12,000 / water point	240,000
		1.2.3 Pilot early wildfire warning system	1	150,000 (lump sum)	150,000
	Output 1.3: Local wildfire volunteer brigades trained, equipped and operational	1.3.1 30 firefighting kits for first response	30	2,000 / kit	60,000
		1.3.2 Fire-risk awareness & prevention signage	30	4,000 / awareness day	120,000
Outcome 2: Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and nature-based solutions	Output 2.1: Climate-resilient water points and livestock infrastructure established for pastoral communities	2.1.1 20 solar-powered water points	20	40,000 / water point	800,000
		2.1.2 10 livestock shelters	10	40,000 / shelter	400,000
	Output 2.2: Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted	2.2.1 Anti-silting of canals and farmland, downstream palm groves (1,000 ha)	1,000	1,000 / ha	1,000,000
		2.2.2 Local aromatic and medicinal plants, upstream palm groves	1	200,000 (lump sum)	200,000
Outcome 3: Strengthened resilient oasis agriculture and local economic empowerment	Output 3.1: Climate-resilient organic farming support services and value-chain activities delivered	3.1.1 Organic date farming as agroecological diversification	1	100,000 (lump sum)	100,000
		3.1.2 Income-generating projects in oasis value chains	20	5,000 / project	100,000
		3.1.3 Oasis product value chains (marketing, labelling)	1	150,000 (lump sum)	150,000
	Output 3.2: Training and capacity-building services for farmers and local organizations delivered	3.2.1 Train farmers in water-efficient techniques	20	10,000 / session	200,000
		3.2.2 Capacity-building for cooperatives/EIGs	10	20,000 / organization	200,000
		3.2.3 Training for women and youth	50	8,000 / session	400,000
		3.2.4 Local capacity and knowledge-sharing on adaptation	1	133,894 (lump sum)	133,894
	Output 3.3: Youth- and women-focused agricultural entrepreneurship and employment support services provided	3.3.1 Support innovative projects benefiting women	20	9,000 / project	180,000
		3.3.2 Agricultural jobs and self-employment (youth/women)	20	10,000 / initiative	200,000
Outcome 4: Enhanced knowledge management and learning for adaptive management and replication	Output 4.1: Project knowledge management system and knowledge products established and operationalized	4.1.1 Develop/operationalize the MEKM framework	1	40,000 (lump sum)	40,000
		4.1.2 Policy briefs, technical and impact reports	5	15,000 / report	75,000
		4.1.3 Digital repository of project outputs	1	50,000 (lump sum)	50,000
	Output 4.2: Knowledge-sharing and adaptive management mechanisms established and functioning	4.2.1 Annual reflection workshops	4	30,000 / workshop	120,000
		4.2.2 Peer-to-peer learning exchanges	5	25,000 / exchange	125,000
		4.2.3 Knowledge-sharing (meetings, media, online)	5	21,000 / action	105,000
Project/Programme Activities Cost (A)					16,718,894
Project/Programme Execution Cost (B)					1,714,286
Total Project/Programme Cost (A + B)					18,433,180
Implementing Entity Management Fee (if applicable) (up to 8.5%)					1,566,820
Amount of Financing Requested					20,000,000

Theory of Change

¹⁷ For additional budget notes for each activity, numbered A1-A29 to codify them to their respective activities, can be accessed here: [budget notes](#)

87. *The project's Theory of Change is further grounded in a transformational shift from the current reactive and fragmented management of oasis systems toward a proactive, integrated, and ecosystem-based resilience model. This transformation is driven by the synergy between climate-resilient and low-emission water infrastructure, ecosystem restoration and nature-based solutions, and the socio-economic empowerment of vulnerable populations, particularly women and youth.*
88. *The proposed adaptation project is underpinned by a Theory of Change which posits that, **IF** climate-vulnerable oasis ecosystems and communities in the Draa Basin are provided with climate-resilient infrastructure, restored and sustainably managed ecosystems, diversified and inclusive livelihoods, and strengthened institutional and community capacities (through the delivery of Outputs 1.1–4.2), **THEN** exposure to climate hazards will be reduced, adaptive capacities will be enhanced, and ecosystem services and livelihoods will be sustained (leading to Outcomes 1–4), thereby achieving the overall project objective of strengthening the resilience and adaptive capacity of oasis ecosystems and vulnerable communities to the impacts of climate change.*
89. *This causal pathway is realized through four interlinked outcomes: (i) improved water availability, hydrological resilience, and reduced ecosystem degradation through integrated water management, ecosystem restoration, and fire and flood risk prevention (Outcome 1), resulting from Outputs 1.1–1.3; (ii) enhanced resilience of pastoral systems and rangelands through sustainable water access, climate-resilient livestock infrastructure, and nature-based solutions (Outcome 2), resulting from Outputs 2.1–2.2; (iii) strengthened socio-economic resilience and empowerment of women and youth through climate-resilient agriculture, diversified value chains, and green entrepreneurship (Outcome 3), resulting from Outputs 3.1–3.3; and (iv) strengthened local institutional capacity and knowledge systems for adaptive management, learning, and replication (Outcome 4), resulting from Outputs 4.1–4.2.*
90. *In addition to the core adaptation outcomes, the project generates significant social, economic, and institutional co-benefits. These include reduced disaster response and recovery costs through improved preparedness and early warning systems; improved food and water security during climate shocks resulting from enhanced water availability, ecosystem restoration, and climate-resilient agricultural practices; and strengthened social cohesion through reduced competition over natural resources and lower risk of resource-related conflicts. The project also delivers strong gender and youth co-benefits by empowering women and young people through participation in resilient value chains, green entrepreneurship, and local governance structures, while creating jobs in ecosystem restoration and climate-resilient agricultural value chains. Finally, strengthened local institutions, participatory governance mechanisms, and knowledge systems contribute to improved transparency, coordination, and long-term sustainability of adaptation investments.*
91. *The project assumes that integrated ecosystem-based adaptation measures, combining resilient infrastructure, nature-based solutions, inclusive livelihood diversification, and strengthened governance and knowledge systems, can address the root causes of vulnerability in oasis systems, including water scarcity, land degradation, biodiversity loss, economic fragility, social exclusion, and weak natural resource governance. By shifting from reactive and fragmented interventions to a proactive, participatory, and ecosystem-based approach, the project enables communities, particularly women and youth, to sustainably manage natural resources, adapt to climate variability, and secure resilient livelihoods.*
92. *This Theory of Change establishes a coherent and replicable adaptation model for arid and semi-arid regions, ensuring that project outputs systematically contribute to outcomes and collectively deliver long-term resilience, improved living conditions, and restored ecosystem integrity in the Draa Basin. The diagram below presents the Theory of Change of the proposed project, illustrating the causal pathways through which targeted adaptation activities are expected to deliver outputs, contribute to intermediate outcomes, and collectively achieve the overall objective of strengthening the resilience and adaptive capacity of oasis ecosystems and vulnerable communities in the Draa Basin.*

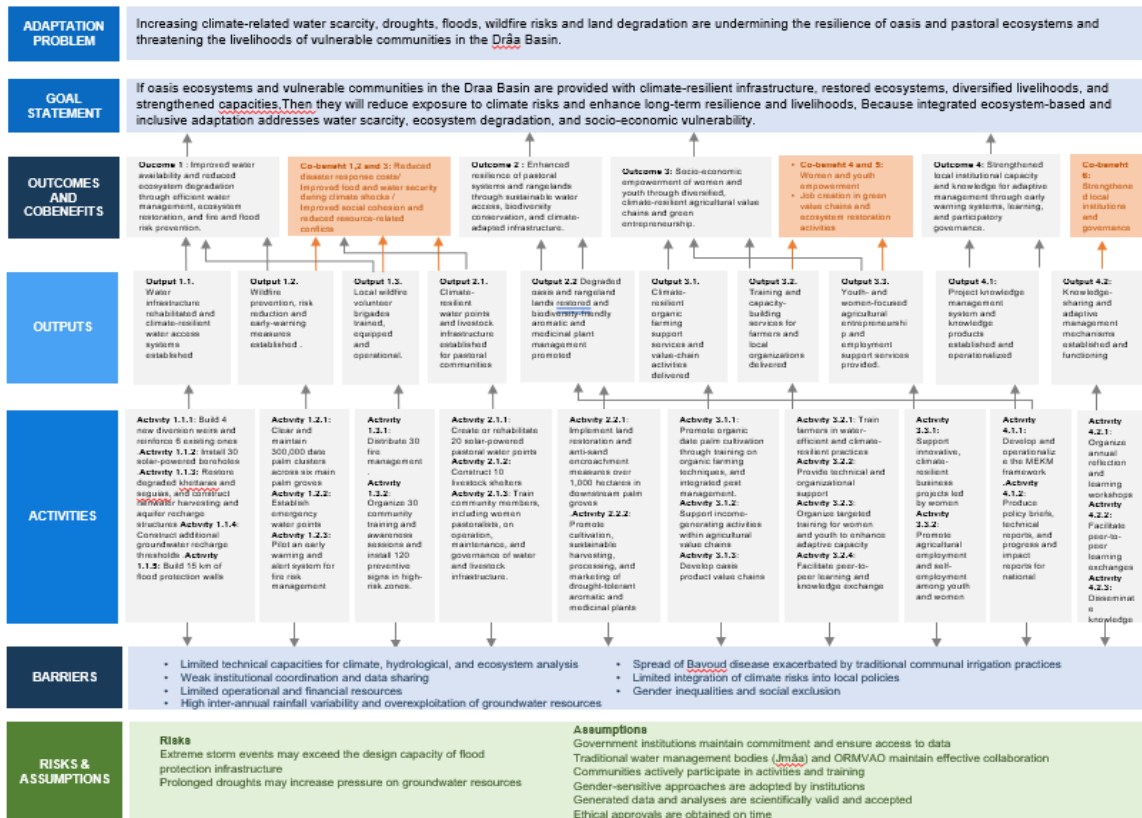


Figure 8: Diagram of ToC

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

93. The project will deliver substantial and measurable economic, social, and environmental benefits by strengthening climate resilience in the oasis ecosystems of the Draa Basin through integrated water management, ecosystem restoration, disaster risk reduction, and inclusive livelihood diversification. The project directly targets the most climate-vulnerable populations (smallholder farmers, pastoralists, women, and youth) whose livelihoods and well-being are increasingly threatened by droughts, floods, wildfires, and land degradation. Overall, the project will directly benefit 250,000 people living in oasis areas and indirectly benefit about 1,100,000 people across the Draa Basin through improved ecosystem services, reduced disaster risks, and strengthened local economies. Women and youth will represent 40% and 20% of direct beneficiaries, respectively. To ensure these targets are met: (i) they will be embedded as mandatory selection criteria in the beneficiary identification process for all activities; (ii) targeted outreach will be conducted through women's groups, youth organizations, and AUEAs during community mobilization; (iii) activity timing, location, and logistics will be adapted to facilitate women's and youth's participation; and (iv) sex- and age-disaggregated participation data will be tracked through the MEKM system (Output 4.1, Activity 4.1.1), with corrective outreach measures triggered if interim targets are not met. These expected benefits are fully aligned with the Adaptation Fund Strategic Results Framework and contribute to strengthening ecosystem resilience, enhancing climate-resilient livelihoods, reinforcing adaptive capacity, and promoting informed decision-making through knowledge generation and learning, as reflected in the AF Outcomes presented in Part III.A (Table 12).

94. Direct beneficiaries are defined as individuals who directly participate in or are immediately affected by project-supported adaptation interventions, including smallholder farmers, pastoralists, cooperative members, and households living in high-risk flood, and wildfire-prone zones. Indirect beneficiaries include populations benefiting from improved ecosystem services, enhanced water security, reduced disaster risks, and strengthened local economies at basin scale.

95. Gender and age disaggregation is based on demographic profiles of oasis communities and participation targets established in project design based on preliminary consultations, with women representing at least 40% and youth (approximately 18–35 years) at least 20% of direct beneficiaries. Indirect beneficiaries were estimated using Morocco's average household size of 4.4 persons¹⁸.

Table 5: Expected Direct and Indirect Beneficiaries by benefit category, gender, and age

Benefit category	Direct beneficiaries	Women (40%)	Men (60%)	Youth (20%)	Indirect beneficiaries
Economic benefits (agriculture, livelihoods, employment, enterprises)	150,000	60,000	90,000	30,000	700,000
Social benefits (water access, safety, EWS, governance, cohesion)	40,000	16,000	24,000	8,000	250,000
Environmental benefits (ecosystem services, land restoration, wildfire risk reduction)	60,000	24,000	36,000	12,000	150,000
Overall project beneficiaries	250,000	100,000	150,000	50,000	1,100,000

Economic benefits

96. The project will generate climate-resilient and diversified income opportunities while reducing economic losses associated with climate hazards. The proposed project will improved agricultural productivity and income stability:
97. Rehabilitation of traditional irrigation systems (khetaras and seguías), combined with construction of recharge thresholds and the installation of solar-powered boreholes, has been demonstrated in Moroccan oasis contexts to significantly improve groundwater levels, irrigation water productivity, and the expansion of irrigated areas, even under severe drought conditions. Evidence from the Adaptation Fund–financed PACCZO project¹⁹ shows that such interventions increased irrigation water productivity by around 20%, expanded irrigated land by over 500 ha, raised groundwater levels affecting wells and khetaras, and improved water access for agricultural and domestic uses, thereby supporting agricultural production and livelihoods in palm groves and surrounding rangelands. Based on these precedents, the proposed project expects to achieve comparable gains in irrigation efficiency and water availability across targeted palm groves, directly supporting climate-resilient agricultural production for tens of thousands of smallholder farmers and pastoral households. These findings are consistent with evidence from the FAO–GEF OASIL project in the Drâa-Tafilalet region, which documents acute groundwater depletion, recurrent drought, and the degradation of oasis agroecosystems affecting approximately 1.7 million people and highlights the central role of improved water resource management in sustaining palm groves, rangelands, and agropastoral livelihoods²⁰. They are further reinforced by Enabel's long-term support to date palm value chains in Drâa-Tafilalet, which highlights drought and water scarcity as key constraints to oasis agriculture and documents the successful deployment of solar-powered pumping systems as a critical enabler of irrigated production and livelihood resilience in palm groves²¹.
98. Technical annexes on khetara rehabilitation further demonstrate that targeted rehabilitation of the most leakage-prone sections (≈30% of total length) yields the highest economic return, reducing conveyance losses by 7–12% and significantly increasing effective water availability without the expense of full system reconstruction²². Monitoring data from the Adaptation Fund–financed PACCZO project show that khetara rehabilitation and improved irrigation management increased irrigation water productivity by approximately 20%, with values rising from 3.9 MAD/m³ (≈ USD 0.39/m³) to 4.7–4.8 MAD/m³ (≈ USD 0.47–0.48/m³), despite successive drought years. These productivity gains translate directly into higher agricultural output, improved income stability, and reduced vulnerability of smallholder farmers by increasing the economic return per unit of scarce water and stabilizing production under drought conditions.
99. Similarly, the integration of solar-powered pumping systems under the PACCZO project reduced monthly operating costs by approximately 3,000 MAD per site (≈ USD 300), enabled year-round irrigation independent of fuel supply constraints, and supported the recovery of previously abandoned palm groves,

¹⁸ Haut-Commissariat au Plan. (2024). Population légale du Royaume du Maroc répartie par régions, provinces et préfectures et communes selon les résultats du Recensement général de la population et de l'habitat 2024 (RGPH 2024). <https://www.hcp.ma/file/242227/>

¹⁹ Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023). Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund.

Kingdom of Morocco.

²⁰ Food and Agriculture Organization of the United Nations (FAO). (2025). Terminal evaluation of the project "Revitalizing oasis agroecosystems through a sustainable, integrated and landscape approach in the Drâa Tafilalet region" (Project code: GCP/MOR/046/GFF; GEF ID: 9537). FAO Project Evaluation Series No. 15/2025. Rome, Italy. <https://doi.org/10.4060/cd5845en>

²¹ Enabel (Belgian Development Agency). (2020). Final report: Project for the development of saffron and date palm value chains in the Souss-Massa and Drâa-Tafilalet regions (PDFSD – MOR 1204311). Enabel, Kingdom of Morocco.

²² Japan International Cooperation Agency. (n.d.). The development study on rural community development project in semi-arid Atlas regions with khetara rehabilitation in the Kingdom of Morocco. JICA. https://openjicareport.jica.go.jp/pdf/11822145_15.pdf

while creating permanent local employment opportunities for system operation and routine maintenance. These findings confirm that solar energy solutions offer superior life-cycle cost performance compared to diesel-based alternatives, which are vulnerable to fuel price volatility and supply disruptions.

100. Flood protection works, including approximately 15 km of masonry and gabion walls, will protect agricultural land and critical rural infrastructure from recurrent flash floods in the Drâa Valley. Evidence from the Adaptation Fund–financed PACCZO project demonstrates that flood control and protective hydraulic works significantly reduce damage to palm groves, irrigation networks, and rural assets in oasis systems exposed to sudden flood events, even during periods of extreme climatic variability²³. These findings are consistent with results from the FAO–GEF OASIL project²⁴ and World Bank assessments²⁵, which identify flash floods as a major driver of land degradation, infrastructure damage, and agricultural production losses in Drâa-Tafilalet. At the national level, flood-related economic losses in Morocco are estimated at approximately USD 450 million annually²⁶, underscoring the importance of localized risk-reduction investments. By preventing repeated asset destruction and safeguarding productive land, the proposed flood protection works will substantially reduce household- and community-level economic shocks, contributing to more stable livelihoods in palm groves and surrounding rangelands.
 101. The project will generate short-term employment through labor-intensive activities such as the construction of flood protection works, rehabilitation of irrigation and oasis infrastructure, ecosystem restoration, and routine maintenance, which have been shown in Moroccan oasis projects to provide immediate income opportunities for vulnerable households during implementation phases²⁷. In parallel, the project will support long-term job creation by strengthening climate-resilient agricultural value chains and fostering green entrepreneurship in oasis economies. Evidence from the Adaptation Fund–financed PACCZO project and the FAO–GEF OASIL initiative demonstrates that investments in oasis restoration, value-addition, and natural resource–based enterprises contribute to sustained employment, diversification of income sources, and reduced vulnerability to climate shocks.
 102. Building on these proven approaches, at least 3,000 people will receive business development and vocational training, and 150 cooperatives and micro- and small enterprises, with a strong emphasis on women- and youth-led initiatives, will be created or strengthened. Target sectors will include organic date products, aromatic and medicinal plants, natural cosmetics, and climate-smart services, including solar-powered irrigation and water management solutions. Similar interventions supported by Enabel in the Drâa-Tafilalet and Souss-Massa regions show that combining skills development, cooperative strengthening, and access to green technologies enhances enterprise viability, local value addition, and employment retention in oasis areas²⁸.
- Social co-benefits**
103. The project will generate significant social co-benefits by strengthening social cohesion, safety, inclusion, and local adaptive capacity in climate-vulnerable areas. Investments in climate-resilient water access infrastructure (including the rehabilitation of traditional khettaras, emergency water points for wildfire response, and community-based early warning systems) will enhance water security, public safety, and disaster preparedness for populations living in high-risk flood- and wildfire-prone zones.
 104. Capacity-building support to Agricultural Water Users Associations (AUEAs), cooperatives, and pastoral organizations will improve participatory governance, transparent and equitable water allocation, and conflict prevention mechanisms, with particular benefits for downstream users and mobile pastoralist groups. The project will place a strong emphasis on social inclusion by empowering women and youth through targeted technical training, leadership development, and improved access to productive assets and markets. These social benefits will directly affect more than 40,000 people living in high-risk flood- and wildfire-prone zones, while strengthened governance structures (AUEAs, cooperatives, pastoral organizations) will support equitable resource management for an estimated 180,000 water users across the project area. At least 40% of training beneficiaries will be women and 20% youth, reinforcing their roles in local decision-making, climate-resilient entrepreneurship, and community-level adaptation planning. This will translate into improved income

²³ Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023). Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund. Kingdom of Morocco.

²⁴ Food and Agriculture Organization of the United Nations (FAO). (2025). Terminal evaluation of the project "Revitalizing oasis agroecosystems through a sustainable, integrated and landscape approach in the Drâa Tafilalet region" (Project code: GCP/MOR/046/GFF; GEF ID: 9537). FAO Project Evaluation Series No. 15/2025. Rome, Italy. <https://doi.org/10.4060/cd5845en>

²⁵ World Bank. (2024). Project appraisal document on a proposed grant in the amount of US\$12 million to the Kingdom of Morocco for the Morocco Sustainable Oasis Ecosystems Management Project (Report No. PAD00100). World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099050124082522744/pad00100>

²⁶ https://rosaluxna.org/publications/the-water-challenge-in-morocco-a-growing-crisis/?utm_source=chatgpt.com#_ftn5

²⁷ Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023).

Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund. Kingdom of Morocco.

²⁸ Enabel (Belgian Development Agency). (2020). Final report: Project for the development of saffron and date palm value chains in the Souss-Massa and Drâa-Tafilalet regions (PDFSD – MOR 1204311). Enabel, Kingdom of Morocco.

security, stronger control over productive assets, and enhanced participation of women and youth in climate-resilient value chains and local economic decision-making. Finally, the rehabilitation of khetaras using traditional techniques will safeguard the cultural heritage of oasis communities while strengthening intergenerational knowledge transfer, collective action, and long-term social resilience. The project will ensure that these social benefits are equitably distributed through transparent beneficiary targeting, participatory validation of sites and beneficiary lists, inclusion of downstream users and pastoral groups in local governance structures, and disaggregated monitoring of access to project benefits.

Environmental Benefits

105. The project will deliver substantial environmental and climate adaptation benefits by restoring and safeguarding the ecological foundations of oasis and pastoral systems, building on proven adaptation pathways implemented in comparable oasis contexts in Morocco. Investments in aquifer recharge structures, improved irrigation efficiency, and solar-powered water supply systems will significantly reduce pressure on overexploited groundwater resources while enhancing sustainable water availability for domestic, agricultural, and pastoral uses. Evidence from similar oasis interventions demonstrates that artificial recharge and hydraulic rehabilitation measures can raise groundwater levels by more than 10 meters, rapidly restore the functionality of wells and traditional khetaras, and improve irrigation water productivity by approximately 20%, thereby strengthening long-term water security under increasing climate stress²⁹.
106. The restoration and stabilization of over 1,000 hectares of degraded land through anti-sand encroachment measures, dune fixation, and rangeland rehabilitation will protect palm groves and surrounding ecosystems from erosion, sedimentation, and advancing desertification. These interventions will contribute to the long-term protection of approximately 5,000 hectares of oasis agro-ecosystems and associated ecosystem services under projected increases in temperature and drought frequency. Such measures have proven effective in safeguarding oasis agro-ecosystems, securing irrigated areas, and preventing irreversible land degradation in highly vulnerable downstream basins³⁰.
107. The targeted use of native and drought-resistant species, including aromatic and medicinal plants, will enhance biodiversity, improve soil structure and fertility, and strengthen ecosystem services that underpin climate-resilient agriculture and pastoral livelihoods. These diversified systems contribute to improved agrobiodiversity, reduced water demand, and enhanced carbon sequestration, while maintaining the ecological integrity of date-palm-based oasis landscapes.
108. In parallel, integrated wildfire risk management measures, including biomass clearing, the establishment of emergency water points, and community-based early warning and response systems, will significantly reduce the frequency and severity of wildfires. Experience from oasis adaptation projects shows that such interventions are critical to preventing large-scale damage to palm groves, rangelands, and biodiversity hotspots, while preserving the long-term adaptive capacity and environmental resilience of oasis ecosystems under rising temperatures and prolonged drought conditions³¹.

Compliance with the Adaptation Fund's Environmental and Social Policy and Gender Policy and Avoidance of Negative Impacts

109. All project activities will be implemented in full compliance with the Environmental and Social Policy (ESP) and the Gender Policy of the Adaptation Fund. An initial environmental and social risk screening was conducted at the concept stage, identifying potential risks primarily associated with small-scale water infrastructure, land restoration works, and livelihood interventions. During project formulation and before implementation, activities presenting moderate or substantial risks will be subject to Environmental and Social Impact Assessments (ESIAs) and the preparation of proportionate Environmental and Social Management Plans (ESMPs), in accordance with Adaptation Fund requirements. Potential adverse impacts will be avoided or mitigated through the following project-specific measures:
 - Participatory planning and site validation, ensuring that water infrastructure, flood protection works, and restoration activities are located and designed with the informed consent of affected communities, including downstream users and pastoral groups;
 - Sustainable water mobilization and soil conservation practices, including aquifer recharge, water-saving irrigation, and the rehabilitation of khetaras using traditional techniques that minimize ecological disturbance;

²⁹ Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023). Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund. Kingdom of Morocco.

³⁰ Ibid

³¹ Ibid

- Biodiversity-friendly land use and nature-based solutions, promoting native and drought-resistant species and avoiding monoculture or invasive species introduction;
- Community-based wildfire prevention and risk management, reducing risks to ecosystems, livelihoods, and human safety;
- Continuous stakeholder engagement, supported by an accessible and transparent grievance redress mechanism to receive, assess, and resolve concerns throughout implementation.

110. Gender equality and social inclusion are integrated throughout the project cycle. A preliminary gender analysis informed project design, and a Gender Action Plan will be finalized during project formulation. The project commits that at least 40% of direct beneficiaries will be women and 20% youth, with targeted measures to strengthen women's and youth's access to training, productive assets, decision-making processes, and climate-resilient livelihood opportunities. Through these measures, the project will ensure that adaptation benefits are delivered equitably, while potential environmental and social risks are proactively managed in line with the Adaptation Fund's safeguards.

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

111. The proposed project adopts a cost-effective adaptation strategy grounded in empirically validated measures implemented under the Adaptation Fund–financed Project for Adaptation to Climate Change in Oasis Zones (PACCZO)³², and in technical and economic evaluations of khattara rehabilitation and small-scale hydraulic infrastructure in southern Morocco³³. These references provide robust evidence that the selected interventions deliver high adaptation returns per dollar invested, particularly in arid and oasis contexts characterized by water scarcity and climate variability.

112. Overall Cost-Effectiveness and Benchmarking: With a total Adaptation Fund investment of USD 20 million, the project will directly benefit approximately 250,000 people and indirectly benefit about 1.1 million people across the Draa Basin, corresponding to an estimated USD 80 per direct beneficiary. This unit cost is comparable to the Adaptation Fund–financed PACCZO project, which achieved an estimated cost of approximately USD 65 per direct beneficiary, while operating at a smaller geographic scale and with a narrower thematic focus. The slightly higher unit cost of the proposed project is justified by: (i) its expanded spatial coverage across both oasis and pastoral systems, (ii) the integration of wildfire risk management and ecosystem-based adaptation measures, (iii) the inclusion of climate-resilient livelihood diversification, and (iv) the incorporation of solar energy systems that reduce long-term operating costs and greenhouse gas emissions.

Table 6: Comparison of proposed adaptation options with alternative options

Project component	Intervention / Proposed option (proposed cost, incl. unit cost where applicable)	Alternative option	Indicative alternative cost (NEW)	Cost-effectiveness rationale
Component 1	Rehabilitation of existing khattaras/seguias / Targeted rehabilitation of critical sections of existing khattaras/seguias Unit cost: US\$130,000/km Total estimated cost: US\$3.9 million	Full reconstruction of hydraulic systems	Approx. US\$6.9 million Indicative benchmark: new irrigation development in sub-Saharan Africa was reported at US\$14,500/ha, compared with US\$8,200/ha for rehabilitation, implying a new-construction-to-rehabilitation cost ratio of approximately 1.77. ³⁴ Applying this ratio to the proposed rehabilitation cost provides an indicative proxy estimate of approximately US\$6.9 million for the full-reconstruction alternative.	Targeted rehabilitation is more cost-effective than full reconstruction. It concentrates investment on deteriorated and critical sections while retaining infrastructure that remains functional. Full reconstruction would require substantially higher capital expenditure for comparatively limited additional benefits. Rehabilitation is therefore expected to restore hydraulic functionality, improve water availability and reduce conveyance losses at a significantly lower investment cost.
	Solar-powered boreholes/ Installation of 30 solar-powered boreholes for palm-grove irrigation Unit cost: US\$54,000/borehole Total: US\$1.62 million	Diesel-powered boreholes/pumping systems	Approx. US\$39,600/borehole, or US\$1.19 million for 30 boreholes. As an indicative Morocco-specific benchmark, the World Bank reported investment costs of US\$110 per beneficiary for wells/boreholes equipped with electric/diesel pumps, compared with US\$150 per beneficiary for renewable-energy systems, implying a diesel-to-renewable upfront-cost ratio of approximately 0.73. ³⁵ Applying this ratio to the proposed US\$54,000/borehole gives an indicative diesel alternative cost of approximately	Diesel pumping has a lower initial capital cost, but substantially higher recurrent energy and maintenance costs. IRENA confirms that the high upfront capital cost of solar pumps compared with diesel/petrol systems is a key barrier. In contrast, solar systems have very low operating costs because they do not require fuel. ³⁶ Morocco-specific evidence also indicates a pumping cost of approximately MAD 0.44/m ³ for solar compared with MAD 1.67/m ³ for diesel, making diesel pumping almost 3.8 times more

³² Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023). Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund. Kingdom of Morocco. https://ifispubprd.azureedge.net/afdocuments/project/9/9_Final_AFB_PPRC_16_12-Proposal-for-Morocco_0.pdf

³³ Japan International Cooperation Agency. (n.d.). The development study on rural community development project in semi-arid Atlas regions with khattara rehabilitation in the Kingdom of Morocco. JICA. https://openjicareport.jica.go.jp/pdf/11822145_15.pdf

³⁴ Bjornlund, V., Bjornlund, H., & van Rooyen, A. F. (2020). Exploring the factors causing the poor performance of most irrigation schemes in post-independence sub-Saharan Africa. *International Journal of Water Resources Development*, 36(sup1), S54–S101. <https://doi.org/10.1080/07900627.2020.1808448>

³⁵ World Bank. (1997). Project appraisal document on a proposed loan to the Kingdom of Morocco for a Rural Water Supply and Sanitation Project (Report No. 17005-MOR). World Bank. The appraisal reports typical investment costs of US\$110 per beneficiary for wells/boreholes equipped with electric/diesel pumps and US\$150 per beneficiary for renewable-energy systems.

³⁶ International Renewable Energy Agency. (2016). Solar pumping for irrigation: Improving livelihoods and sustainability. IRENA. The report notes the higher upfront capital requirements of solar pumping relative to diesel/petrol systems and the substantially lower operating costs of solar technologies.

			US\$39,600/borehole.	expensive per m ³ in operating-energy terms. ³⁷ Solar therefore entails higher upfront investment but substantially reduces exposure to fuel-price volatility and recurrent operating costs over the project life.
	Flood protection/ Masonry/gabion flood- protection structures US\$150,000/km — total US\$2.25 million	Reinforced- concrete (RCC cantilever) flood- protection structures	Approx. US\$231,000/km, or US\$3.47 million for 15 km. Chikute and Sonar (2019) report costs of Rs 54,156/running metre for gabion walls compared with Rs 83,467/running metre for RCC cantilever walls, corresponding to an RCC-to-gabion cost ratio of approximately 1.54. ³⁸ Applying this ratio to the proposed US\$150,000/km cost gives an indicative RCC alternative cost of approximately US\$231,000/km, or US\$3.47 million for 15 km.	Masonry/gabion structures provide a more cost-effective solution than reinforced-concrete cantilever structures for the proposed intervention. The benchmark indicates substantially higher construction costs for RCC, driven by concrete, reinforcement, formwork and associated construction requirements. Gabion systems additionally offer advantages in terms of flexibility, drainage, shorter construction time and use of locally available materials. For the proposed 15 km intervention, the indicative capital saving is approximately US\$1.22 million, while avoiding unnecessary over-engineering where site conditions permit masonry/gabion protection.
	Groundwater resilience/ Construction of four aquifer-recharge thresholds Unit cost: US\$500,000/threshold Total: US\$2.00 million	Conventional water-supply augmentation through new infrastructure and/or increased groundwater abstraction	No directly comparable total CAPEX can be robustly estimated without site-specific data on water volumes, abstraction infrastructure, conveyance requirements and operating conditions. As a life-cycle benchmark, Ross (2022) ³⁹ reports an average levelised cost of US\$0.24/m ³ for 11 MAR schemes using natural water through wells and infiltration, compared with US\$0.74/m ³ for five MAR schemes using recycled water. The paper also reports a median cost of approximately US\$2.13/m ³ for water from small desalination facilities, based on Cooley et al. (2019) ⁴⁰ .	Natural-water aquifer recharge offers a comparatively low-cost means of improving groundwater availability while simultaneously supporting aquifer replenishment. The benchmark cost of US\$0.24/m ³ is about 68% lower than recycled-water MAR (US\$0.74/m ³) and about 89% lower than the cited small-scale desalination benchmark (US\$2.13/m ³). Unlike increased abstraction, recharge measures also contribute to maintaining groundwater stocks and aquifer condition. Ross notes that MAR can complement surface storage and help sustain groundwater resources where extraction is appropriately managed.
	Wildfire risk reduction/ Integrated wildfire prevention and preparedness package, including early warning, water points, community preparedness and risk- reduction measures. Total: US\$1.57 million (heterogeneous package; no single physical unit)	Predominantly reactive wildfire suppression and emergency response	Approx. US\$6.0–6.3 million as an indicative budget-equivalent counterfactual. WWF (2019) reports that Mediterranean countries spend on average €23/forest ha on firefighting versus €6/forest ha on prevention, a suppression-to-prevention expenditure ratio of approximately 3.8:1. The same report estimates that about 80% of more than €2 billion/year in Mediterranean fire-management expenditure is devoted to suppression and 20% to prevention, equivalent to a 4:1 ratio. ⁴¹ Applying these ratios to the proposed US\$1.57 million preventive package gives an indicative reactive-response equivalent of approximately US\$6.0–6.3 million. This is supported by observed suppression costs for large fires in Andalusia, Spain, where Molina et al. (2019) reported approximately €62–220/ha for recent large fires and individual suppression operations costing approximately €0.34–2.15 million per fire ⁴² .	The integrated preventive approach is more cost-effective because it reduces the probability and potential severity of fires before emergency suppression becomes necessary. Reactive strategies involve recurrent deployment of ground crews, vehicles and costly aerial resources while leaving the underlying drivers of wildfire exposure largely untreated. The Mediterranean expenditure evidence shows that suppression-oriented systems absorb substantially more resources than prevention. Furthermore, actual large-fire experience demonstrates that a single severe wildfire can generate suppression expenditures exceeding €2 million, excluding wider economic, ecological and post-fire recovery losses ⁴³ .
Component 2 –	Pastoral & rangeland livelihoods/ Integrated package of solar water points, pastoral shelters, rangeland restoration and nature- based solutions Total: US\$2.40 million	Stand-alone conventional livestock/water infrastructure, without integrated rangeland restoration and ecosystem- management measures	Site-specific total cannot be robustly established from available evidence. Morocco-specific benchmarks demonstrate substantial variability in conventional pastoral water infrastructure. In IFAD's Livestock and Rangelands Development Project in the Eastern Region – Phase II, equipment of pastoral water points was initially estimated at MAD 1.5 million per water point, while actual costs reached approximately MAD 5 million per water point. IFAD attributed the higher costs to remoteness, limited availability of construction materials and depth of works; water-infrastructure costs were on average almost twice those of comparable works elsewhere in the region. ⁴⁴ Recent Moroccan tender benchmarks also illustrate variation: around MAD 0.30 million for a 25 m ³ reservoir and livestock trough in Beni Mellal, MAD 0.63 million for creation/development/equipment of a livestock water point in Assa-Zag, and about MAD 0.66 million for transformation of a livestock watering point in Guercif. ⁴⁵	Stand-alone infrastructure may meet immediate livestock-watering needs but does not address the underlying degradation of the resource base. The integrated approach combines water access with rangeland restoration, nature-based measures and pastoral facilities, thereby addressing both livestock needs and ecosystem condition. Morocco's own IFAD experience shows that pastoral water infrastructure can become substantially more expensive under remote and difficult conditions, while the same project found that rangeland rehabilitation and improved water access contributed to better biomass, vegetation recovery, soil protection and improved livestock productivity. ⁴⁶
	Pastoral & rangeland livelihoods/ Aromatic and medicinal plant (PAM) production, processing and commercialization Total: US\$0.20 million	Continued dependence on climate-sensitive pastoral and agricultural livelihoods / no diversification investment	Status-quo CAPEX: approximately US\$0, but this is not a zero-cost economic alternative. The proposed PAM investment is consistent with Moroccan investment benchmarks: the Moroccan Office du Développement de la Coopération identifies approximately MAD 200,000 in capital investment + MAD 20,000 working capital for a PAM drying cooperative, and MAD 300,000 + MAD 30,000 working capital for a PAM processing cooperative. ⁴⁷	Maintaining current livelihood patterns avoids initial investment but perpetuates exposure to drought, water scarcity and rangeland degradation. Diversification into PAM provides an alternative revenue stream that is already recognized in Moroccan rural-development programmes. IFAD has specifically supported aromatic and medicinal plant production as an income-generating activity for women and young people in rural Morocco. The US\$6.7 billion figure should be used only to

37 Morocco Ministry of Energy Transition and Sustainable Development. Programme national de la promotion du pompage solaire dans l'irrigation. The Ministry reports indicative pumping costs of MAD 0.44/m³ for solar, MAD 0.76/m³ for subsidised butane, and MAD 1.67/m³ for diesel.

38 Chikute, G. C., & Sonar, I. P. (2019). Techno-economical analysis of gabion retaining wall against conventional retaining walls. *International Research Journal of Engineering and Technology*, 6(8), 1161–1167

39 Ross, A. (2022). Benefits and costs of managed aquifer recharge: Further evidence. *Water*, 14(20), 3257. <https://doi.org/10.3390/w14203257>

40 Ross, A. (2022). Benefits and costs of managed aquifer recharge: Further evidence. *Water*, 14(20), 3257. <https://doi.org/10.3390/w14203257>

41 WWF. (2019). The Mediterranean burns: WWF's Mediterranean proposal for the prevention of rural fires. WWF. The report estimates annual fire-management expenditure exceeding €2 billion across the northern Mediterranean, with approximately 80% allocated to suppression and 20% to prevention; average expenditure is €23/forest ha for firefighting and €6/forest ha for prevention.

42 Molina, J. R., González-Cabán, A., & Rodríguez y Silva, F. (2019). Potential effects of climate change on fire behavior, economic susceptibility and suppression costs in Mediterranean ecosystems: Córdoba Province, Spain. *Forests*, 10(8), 679. <https://doi.org/10.3390/f10080679>

43 Molina, J. R., González-Cabán, A., & Rodríguez y Silva, F. (2019). Potential effects of climate change on fire behavior, economic susceptibility and suppression costs in Mediterranean ecosystems: Córdoba Province, Spain. *Forests*, 10(8), 679. <https://doi.org/10.3390/f10080679>

44 International Fund for Agricultural Development. (2014). Morocco: Livestock and Rangelands Development Project in the Eastern Region – Phase II: Project Completion Report Digest. IFAD. The report notes an appraisal estimate of MAD 1.5 million per water point compared with actual equipment costs of approximately MAD 5 million per water point, and attributes substantial cost variation to remoteness, construction-material availability and depth of works

45 Recent Moroccan public-procurement notices provide additional contemporary benchmarks: a 2026 livestock water-point project comprising a 25 m³ reservoir and trough in Beni Mellal was estimated at MAD 297,924; a 2025 livestock water-point creation and equipment tender in Assa-Zag at MAD 629,500; and a 2024 livestock water-point transformation project in Guercif at MAD 655,200.

46 International Fund for Agricultural Development. (2014). Morocco: Livestock and Rangelands Development Project in the Eastern Region – Phase II: Project Completion Report Digest. IFAD.

47 Office du Développement de la Coopération. (2026). Coopération de séchage des plantes aromatiques et médicinales; Coopération de transformation de plantes aromatiques et médicinales. The indicative investment requirements are MAD 200,000 plus MAD 20,000 working capital for a drying unit and MAD 300,000 plus MAD 30,000 working capital for a processing unit.

			At the macroeconomic level, World Bank modelling estimates that combined water scarcity and climate-induced crop-yield changes could reduce Morocco's GDP by as much as US\$6.7 billion per year at 2016 constant prices. ⁴⁸	illustrate the national scale of climate-related economic exposure—not as an avoided benefit attributable to this US\$0.20 million intervention.
Component 3	Climate-resilient agricultural livelihoods/ Climate-resilient/organic agriculture, value-chain development and entrepreneurship Total: US\$1.66 million	Conventional agricultural productivity and value-chain support, focused primarily on increasing production, product quality, processing and market access without systematic integration of climate-resilience measures	A Morocco-specific programme benchmark is approximately US\$277 per direct beneficiary. IFAD's Agricultural Value Chain Development Project in Al-Haouz had a total cost of US\$9.13 million and approximately 33,000 direct beneficiaries, equivalent to about US\$277/beneficiary. ⁴⁹ Its core interventions focused on increasing farm productivity and quality, processing/packaging and access to remunerative markets, making it a useful comparator for conventional agricultural/value-chain support. A total alternative cost should therefore be calculated as US\$277 × the number of direct beneficiaries targeted under Component 3. Without that beneficiary number, a robust total counterfactual cannot be stated.	Conventional agricultural support can generate productivity and market benefits, but does not necessarily address the additional risks created by declining water availability, increasing drought and climate-driven yield losses. Morocco's own experience under the Plan Maroc Vert treated climate adaptation as an incremental investment added to underlying agricultural development projects. ⁵⁰ This incremental investment is justified by the scale of climate exposure: World Bank modelling indicates that a 25% reduction in economy-wide water availability combined with climate-induced crop-yield losses could reduce Morocco's national GDP by about 6.5%. ⁵¹ The proposed approach therefore adds resilience, diversification, value addition and entrepreneurship to conventional productivity support, reducing the risk that productivity gains are subsequently eroded by climate impacts.
Component 4	Knowledge and adaptive management/ Knowledge management, learning, adaptive management and replication Total: US\$0.515 million	Standard compliance-focused monitoring and evaluation, limited mainly to results monitoring, reporting, mid-term/final evaluation and mandatory safeguards monitoring	Approx. 2% of total project financing for a project above US\$10 million, based on GEF historical M&E budget benchmarks. ⁵² For example, if total project financing is US\$20 million, this corresponds to approximately US\$0.40 million. The exact alternative cost should therefore be calculated as 2% × final project financing rather than using a generic US\$0.4–1.0 million range.	A compliance-only M&E system would entail a somewhat lower upfront cost but would provide a narrower set of functions. The proposed US\$0.515 million component goes beyond mandatory monitoring and reporting by financing systematic knowledge capture, learning, adaptive management, dissemination and replication. The Adaptation Fund itself recognizes these functions as substantive adaptation investments: its dedicated Learning Grants provide up to US\$500,000 for learning, knowledge management and knowledge-sharing activities. ⁵³ Comparable AF projects have also financed dedicated knowledge-management components, including US\$780,000 in Uruguay, US\$1.0 million in the Benin–Togo BOUCLIER-CLIMAT project, and US\$109,283 in a smaller US\$1.24 million project in India. ⁵⁴

113. Cost-effectiveness of water and hydraulic interventions: The project prioritizes rehabilitation of existing water infrastructure, including khettaras, seguias, recharge thresholds, and protection works, rather than high-cost new construction. The PACCZO final evaluation confirms that investments in small and medium hydraulic works were rated as “efficient”, with actual unit costs consistently below regional reference costs. Empirical benchmarks from PACCZO indicate:

- Rehabilitation of khettaras at an average cost of approximately USD 100 per linear meter⁵⁵, reflecting targeted rehabilitation of critical sections rather than full reconstruction;
- Protective masonry or gabion flood control structures implemented at average costs of approximately USD 460–490 per linear meter, within the lower bound of historical regional benchmarks and significantly lower than conventional reinforced concrete alternatives;
- Recharge thresholds delivered at unit costs below initial estimates, with physical achievement rates exceeding 170% of planned targets, demonstrating strong execution efficiency and cost savings.

114. Cost-effectiveness of flood protection and nature-based solutions: The use of gabion and masonry protection works, rather than conventional reinforced concrete structures, reflects both economic and technical efficiency. PACCZO evaluations confirm that gabion walls: (i) require lower foundations, (ii) adapt better to soil movement and extreme temperatures, (iii) use locally available materials, and (iv) incur significantly lower construction and maintenance costs over time⁵⁶. These structures proved effective in protecting palm groves, irrigation networks, and rural infrastructure from flash floods, thereby avoiding repeated reconstruction costs and reducing long-term public expenditure on disaster recovery.

115. Cost-effectiveness of institutional and community-based measures: Beyond physical investments, the project emphasizes community-based management, training, and early warning systems, which the PACCZO evaluation identified as highly cost-effective due to their low capital requirements and sustained impact. For example: (i) training costs under PACCZO averaged approximately 2,000 MAD (≈ USD 200) per participant,

⁴⁸ Taheripour, F., Tyner, W. E., Haqiqi, I., & Sajedinia, E. (2020). Water scarcity in Morocco: Analysis of key water challenges. World Bank. The modelling estimates potential GDP losses of up to US\$6.7 billion annually at 2016 constant prices under combined water-scarcity and climate-induced crop-yield impacts.

⁴⁹ International Fund for Agricultural Development (IFAD). Agricultural Value Chain Development Project in the Mountain Zones of Al-Haouz Province, Morocco. The project had a total cost of US\$9.13 million and approximately 33,000 direct beneficiaries, and supported increased farm productivity and quality, value addition through processing and packaging, and improved market access.

⁵⁰ World Bank. (2011). Integrating climate change in the implementation of the Plan Maroc Vert project. World Bank. The project documentation explicitly states that the GEF grant would cover the incremental costs of adopting climate-change adaptation measures in selected Plan Maroc Vert projects.

⁵¹ World Bank. (2023). Morocco CDDR background note: Water scarcity and droughts. World Bank. A 25% reduction in water availability combined with climate-induced crop-yield reductions could lower national GDP by up to approximately 6.5%.

⁵² Global Environment Facility. (2020). Guidelines on the GEF Project and Program Cycle Policy. GEF. The guidelines report average M&E budgets of approximately 5% of GEF financing for projects up to US\$5 million, 3% for projects of US\$5–10 million, and 2% for projects above US\$10 million.

⁵³ Adaptation Fund. (n.d.). Learning Grants. Learning Grants provide up to US\$500,000 per grant/project to support learning, knowledge management, knowledge products and knowledge-sharing activities.

⁵⁴ Adaptation Fund project examples include a US\$780,000 knowledge-management component in Uruguay, a US\$1 million knowledge-management allocation in the Benin–Togo BOUCLIER-CLIMAT project, and a US\$109,283 knowledge-management component in the India climate-proofing project, demonstrating that dedicated KM expenditure is routinely treated as a substantive project function rather than merely a compliance cost.

⁵⁵ Indicative exchange rate: 1 USD ≈ 10 MAD (rounded, used for cost-effectiveness comparison purposes)

⁵⁶ Agricultural Development Agency (ADA), & National Agency for the Development of Oasis and Argan Zones (ANDZOA). (2023).

Final evaluation of the Project for Adaptation to Climate Change in Oasis Zones (PACCZO), financed by the Adaptation Fund.

Kingdom of Morocco. https://ifispubprd.azureedge.net/afdocuments/project/9/9_Final_AFB_PPRC_16_12-Proposal-for-Morocco_0.pdf

with attendance rates exceeding 100% of targets; and community-managed systems showed reduced maintenance needs and higher durability compared to externally operated infrastructure.

116. The proposed project builds on these lessons by embedding operation and maintenance responsibilities within Agricultural Water Users Associations, cooperatives, and communal structures, thereby minimizing recurrent costs and ensuring continuity beyond the project lifespan. The proposed project demonstrates cost-effectiveness by: (i) maximizing the reuse and rehabilitation of existing assets; (ii) prioritizing low-maintenance, locally appropriate technologies; (iii) reducing life-cycle costs through solar energy and nature-based solutions; and (iv) delivering measurable productivity and resilience gains per unit of investment.

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

117. Over the past two decades, Morocco has taken steps to combat climate change, and adaptation has been identified as a key priority for Morocco. Thus, the current project is designed within the policy frameworks adopted by Morocco in terms of climate change adaptation. According to the Climate Action Tracker (CAT), Morocco's climate objectives and policies are considered "almost sufficient"⁵⁷ and the targets set as part of its unconditional commitment correspond to its fair contribution under the Paris Agreement. Oases are among the priorities of the Moroccan government. The sustainable development of oases is enshrined in the National Sustainable Development Strategy (NSSD)-2030 and in the various sectoral strategies and action plans. Preserving the oasis ecosystem is one of the Moroccan government's priorities. To this end, the Agence Nationale pour le Développement des Zones Oasiennes et de l'Arganier (ANDZOA) (National Agency for the Development of Oasis and Argan Zones) was created in 2010 with the mission of coordinating and steering sectoral policies and improving the living conditions of oasis populations by promoting integrated and sustainable oasis management, with a focus on water resource management, agriculture, and ecotourism. In 2023, a new strategy for the development of the oasis and argan zones by 2030 was drawn up, based on three strategic guidelines: (i) Increasing the resilience of territories and ecosystems to climate change; (ii) Improving the social well-being of people in rural and urban areas; (iii) Diversify the region's economy to make it more competitive and focus on high value-added sectors. According to Morocco's New Development Model (2021), the Commission calls for the consolidation of efforts in favour of agricultural development by fully integrating sustainability constraints. It recommends a rapid transition to crops that are resilient to climate hazards and have high added value, as well as structural responses focused on: (i) optimising water use, in particular by prioritising irrigation for crops that ensure national food security and ensuring that export crops make efficient use of water; and (ii) rationalising agricultural energy consumption through greater penetration of renewable energies, particularly through the expansion of solar energy use for water pumping. The proposed project is therefore aligned with the national strategies, priorities, plans, legislation, and aspirations of Morocco's government in line with sustainable development of the oases. Table 5 shows the link between the project and the identified-related plans and strategies.

Table 7: Link between the project and the identified-related plans and strategies

Identified adaptation-related plans/strategy	Main objective of the plans/strategy	The relevance to the proposed project & alignment
National Strategic Adaptation Plan (PNSA) (2020-2030) ⁵⁸	The main objective of the PNSA is to guide the implementation of the actions required to adapt Morocco's territories to climate change by 2030, in line with the long term objectives of the Paris Agreement, through a progressive and systematic alignment approach in which adaptation commitments under the NDC are identified through its processes, while promoting adaptation actions that	PNSA is relevant to the proposed project. PNSA provides a roadmap for 2020-2030, with a concerted and inclusive framework. The project intends to tackle security, climate resilience hazards, protection of water resources, and protection of efficient and sustainable water supply in a context of increasing scarcity and climate uncertainty, the strengthening of the resilience of sensitive oasis ecosystem, all of which are actions included in the PNSA. The proposed project is aligned with the PNSA through its axis 3 (Assessment, prevention, and reduction of climate vulnerabilities and risks) under strategic objective 3 (Prevent and reduce the impacts of climate risks on security, health, economic, social, and cultural systems, as well as on public and private assets and the population as a whole, in the context of climate change); axis 4 (Resilience of sensitive resources and ecosystems) under strategic objective 4 (Strengthen the resilience of natural resources and ecosystems to climate change through approaches that combine ecosystem preservation with support for sustainable livelihoods) and axis 5 (Resilience of production sectors) under strategic

⁵⁷ This rating indicates that Morocco's climate policies and commitments are almost in line with the 1.5°C temperature limit set by the Paris Agreement and could achieve this compliance with moderate improvements.

⁵⁸ Ministère de la Transition Énergétique et du Développement Durable, Département du Développement Durable (2022). Plan National Stratégique d'Adaptation (PNSA-2030), 90 P.

Identified adaptation-related plans/strategy	Main objective of the plans/strategy	The relevance to the proposed project & alignment
	generate co benefits for mitigation and sustainable development.	objective 5 (Enhance the resilience of the most vulnerable economic sectors to climate change). Together, these actions contribute to Outcome 1 (Strengthened resilience of oasis ecosystems to climate hazards through integrated natural resource management and enhanced wildfire prevention), Outcome 2 (Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions), and Outcome 3 (Strengthened resilient oasis agriculture and economic empowerment of local communities).
National Strategy for Natural Risk Management (2020-2030) ⁵⁹	The main objective of this strategy is to Strengthen long term resilience to natural disasters by improving risk knowledge and assessment, promoting prevention, and enhancing preparedness to enable rapid recovery and effective reconstruction.	The National Strategy for Natural Risk Management is relevant to the proposed project, as it defines a comprehensive approach to disaster and climate-related risk management, some of whose actions are reflected in the current project. This project is aligned with axis I (Strengthening risk management governance) under program 1 (Strengthening central governance of risk management) and program 2 (Strengthening risk management at the regional and local levels). It is also aligned with axis III (Prevention of natural risks and resilience development) under program 6 (Raising stakeholder awareness on risk management), program 7 (Gender approach in natural disaster risk management), program 8 (Strengthening public and private sectoral and territorial investment in risk management) and Program 9 (Strengthening the resilience of critical infrastructure). In addition, the project aligns with axis IV (Preparedness for natural disasters for rapid recovery and improved reconstruction) under program 13 (Strengthening the crisis management system). All together, contribute to Outcome 1 (Strengthened resilience of oasis ecosystems to climate hazards through integrated natural resource management and enhanced wildfire prevention), Outcome 3 (Strengthened resilient oasis agriculture and economic empowerment of local communities) and Outcome 4 (Enhanced knowledge management and learning for informed decisions, adaptive management, and replication of good practices).
Nationally Determined Contribution 3.0 (2026-2035) ⁶⁰	Morocco's NDC 3.0 places adaptation among the country's highest climate priorities and aims to strengthen the resilience of populations, territories, infrastructure, and ecosystems through an integrated, territorially grounded, and inclusive approach. It prioritizes water security, sustainable management of water resources, ecosystem restoration, biodiversity conservation, nature-based solutions, disaster risk reduction, sustainable agriculture, green jobs, gender equality, youth participation, and social and spatial equity.	NDC 3.0 is highly relevant to the proposed project. The project directly addresses major climate vulnerabilities affecting oasis ecosystems and local communities, including water scarcity, recurrent droughts, floods, land degradation, desertification, biodiversity loss, and wildfire risks. The proposed interventions are aligned with NDC 3.0 priorities through integrated water management, rehabilitation of traditional irrigation systems, restoration of degraded oasis ecosystems, promotion of nature-based solutions, strengthening of climate-resilient agriculture and pastoral systems, wildfire prevention, and support for women- and youth-led green entrepreneurship. These interventions contribute directly to Outcome 1, Outcome 2, Outcome 3, and Outcome 4 of the proposed project.
Morocco Forest Strategy (2020-2030)	The general objective of the strategy is to halt deforestation in Morocco by reversing decades of forest degradation while modernizing and strengthening the competitiveness of the forest sector through a structured and sustainable approach.	The proposed project contributes directly to the objectives of the Morocco Forest Strategy (2020–2030), particularly its biodiversity, sustainability, and participatory forest management orientations. The strategy promotes the protection of biodiversity and natural heritage, the fight against desertification, ecosystem restoration, and the sustainable management of forest and pastoral landscapes. In this regard, the proposed project is closely aligned with Outcome 2: Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions.
"Generation Green 2020-2030" strategy	The main objective of Generation Green 2020-2030 is to strengthen sustainable and resilient agricultural development by consolidating agricultural value chains, developing organic agriculture, integrating renewable energy into production and irrigation systems, and preserving ecosystems and rangelands.	The "Generation Green 2020-2030" Strategy is based on two main pillars: prioritising the human element and sustaining the development momentum of the agricultural sector, making this Strategy relevant to the proposed project. The proposed project is consistent with the "Generation Green 2020-2030" Strategy under its pillar 2, which focuses on the development and consolidation of agricultural production sectors, the improvement of marketing and distribution conditions for agricultural products, the structuring and modernization of distribution chains, the promotion of quality, digitalization, innovation and Green Tech, as well as the development of sustainable and climate resilient agriculture, contributing to Outcome 2 (Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions) and Outcome 3 (Strengthened resilient oasis agriculture and economic empowerment of local communities).
Government Plan for Equality III (PGE III), 2023–2026	The main objective of the Government Plan for Equality III (PGE III, 2023–2026) is to advance effective equality between women and men, strengthen women's empowerment and leadership, increase their participation, and reduce persistent gender	The proposed project contributes directly to the objectives of the Government Plan for Equality III (PGE III, 2023–2026), particularly its focus on women's economic empowerment, improved access to livelihood opportunities, and enhanced participation in local decision-making. The plan promotes women's integration into value chains, skill-building, and targeted support for women-led entrepreneurship and cooperatives. In this regard, the proposed project is closely aligned with Outcome 3 through improved access to climate-resilient livelihoods, value chains, skills and economic opportunities for women.

⁵⁹ Ministère de l'intérieur (2021). Stratégie Nationale 2020 - 2030 de Gestion des Risques des Catastrophes Naturelles

⁶⁰ Contribution Déterminée au Niveau National 3.0 du Maroc, 2026–2035. Available at: <https://unfccc.int/sites/default/files/2026-04/CDN%203.0%20DU%20MAROC.pdf>

Identified adaptation-related plans/strategy	Main objective of the plans/strategy	The relevance to the proposed project & alignment
	inequalities across social, economic, and public life	
National Climate Plan 2020-2030 (PCN 2030)	The main objective of the National Climate Plan to 2030 is to strengthen Morocco's resilience to the impacts of climate change while ensuring an accelerated transition towards a low-carbon economy, through coordinated adaptation and mitigation actions covering all economic sectors, territories, and ecosystems. It is based on five pillars: (i) establishing stronger climate governance; (ii) building resilience to climate risks; iii) accelerating the transition to low-carbon economy.	The PCN-2030 is relevant to the proposed project because it serves as the national reference framework for structuring the Kingdom's climate policy, meeting national and international commitments, strengthening climate governance, mobilizing financing, and integrating climate change into public and sectoral policies. The proposed project is aligned with the PCN-2030 under its pillar 2 (Strengthening resilience to climate risks), pillar 5 (Strengthening human, technological, and financial capacities), contributing to Outcome 1 (Strengthened resilience of oasis ecosystems to climate hazards through integrated natural resource management and enhanced wildfire prevention), Outcome 2 (Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions), Outcome 3 (Strengthened resilient oasis agriculture and economic empowerment of local communities).
National Programme for Drinking Water Supply and Irrigation (PNAEPI), 2020–2027	The main objective of the National Water Strategy is to strengthen water security through improved drinking-water supply, irrigation water availability, water-resource mobilization, and the more efficient and sustainable use of water resources.	The proposed project contributes directly to the objectives of the National Water Strategy, particularly through the rehabilitation of traditional irrigation infrastructure, the improvement of irrigation efficiency, the development of solar-powered water systems, and targeted groundwater recharge measures to combat increasing water scarcity. In this regard, the proposed project is closely aligned with Outcome 1 (Enhanced water security and resource mobilization) and supports the resilience of oasis agriculture under Outcome 3.

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

118. Morocco has a clear and comprehensive legal framework. Since the late 1980s, numerous laws and administrative provisions have been promulgated by the competent administrative authorities, covering a wide range of topics related to environmental protection and improvement, sanitation, classification and management of solid waste, disposal methods, the conservation of protected areas and historical monuments and sites, inscriptions, artworks, and antiquities. Accordingly, the project has been developed to ensure full compliance with national technical standards and the applicable legal framework in Morocco, and the Environmental and Social Policy of the Adaptation Fund. All project activities, from selection to implementation, will be governed by Moroccan legislation and regulations, particularly those relating to infrastructure development, environmental protection, agriculture, water resources management, and organization of the communes.
119. The adaptation project activities such as the construction of weirs, installation of boreholes, establishment of solar-powered water points, construction of masonry or gabion walls (to protect agricultural land and irrigation infrastructure from flooding), rehabilitation of degraded khetaras, and construction of rainwater harvesting structures, and cleaning and maintenance of date palm clumps to reduce fire vulnerability, will comply with national norms and standards, under Law 12-03 on Environmental Impact Assessments, Law no. 49-17 on Environmental Assessment, Law n°01-06 on the sustainable development of palm groves and the protection of the date palm (*Phoenix dactylifera*), and related legislation, which control environmental impact assessment, ecosystems restoration, and the protection of date palms in Morocco. Environmental screening will be conducted for all project interventions, and where applicable, ESMPs/ESMFs will be formulated and validated by the relevant authorities.
120. The project will be implemented in accordance with the Adaptation Fund's Environmental and Social Policy (ESP), to ensure that project activities do not lead to maladaptation. Furthermore, the project will integrate

regular monitoring, participatory audits, and consultations with national stakeholders into its environmental and social management framework to maintain compliance and address emerging risks effectively. Throughout its implementation, the project will adopt a gender-responsive and inclusive approach, safeguard vulnerable populations, value indigenous knowledge, and respect human rights standards. The main texts and regulations of the general legal framework relevant to the Project's activities are presented in the table below.

Table 8: Relevant standard/policy/framework for the Project

Standard / Policy/Framework	Scope and Relevance to the Project	How it relates to the proposed project	Steps to be taken to ensure compliance
Framework Law n°99-12 on the National Charter for the Environment and Sustainable Development	Establishes the overarching principles for environmental protection, sustainable development, and climate resilience, applicable to all project activities.	It is related to the proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established) ; Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established); Output 2.1 (Climate-resilient water points and livestock infrastructure established for pastoral communities); Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted); Output 3.1 (Climate-resilient organic farming support services and value-chain activities delivered).	Integrate the principles of environmental protection and sustainable development into project design and implementation; conduct environmental screening; ensure that environmental safeguards are incorporated into technical specifications and works supervision. Responsible institutions: ADA/PMU and ORMVAO, in coordination with the relevant environmental authorities and communes
Law 12-03 on Environmental Impact Assessments and Law 49-17 on Environmental Assessment	Applies to all development projects with potential environmental impacts, including water infrastructure, flood protection, and land restoration	This Law is related to the proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established); Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established); Output 2.1 (Climate-resilient water points and livestock infrastructure established for pastoral communities); Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted);	Screen all relevant activities to determine applicable environmental assessment requirements; prepare the required environmental assessment/management instruments; obtain the required environmental approvals before works commence; integrate mitigation measures into bidding documents and contractor supervision. Responsible institutions: ADA/PMU and ORMVAO, in coordination with the competent environmental authorities and relevant local authorities.
Law n°36-15 on Water	Regulates the protection, use, and allocation of water resources, relevant to khetaras rehabilitation, borehole drilling, and rainwater harvesting systems.	Law n°36-15 on Water is related to the adaptation proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established); Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established); Output 2.1 Climate-resilient water points and livestock infrastructure established for pastoral communities);	Submit water-related infrastructure designs to the competent Basin Agency; obtain the required authorizations for boreholes, water infrastructure and aquifer-recharge works; comply with water-resource protection and abstraction requirements; monitor water use during implementation. Responsible institution: ABH-Draa, with ADA/ORMVAO and relevant local authorities.
Dahir 1-69-170 on Soil Protection and Restoration	Ensures preservation of agricultural soils and prevention of erosion. Article 1 establishes the principle that the State can assist within the framework of an agreement, by carrying out work and granting subsidies to owners, local authorities, and groups who undertake to carry out administrative measures to protect and restore the soil. This aid is totally tied to the property (article 5). In the event of threatening erosion, a national soil protection and restoration perimeter may be created by decree (article 6). The creation of such a perimeter is binding on all property owners, who must also participate (article 8). The entire cost of the infrastructure is borne by the State. Completed works remain under the control of the Administration for a period of 30 years (article 14), which may notify interested parties in the event of lack of maintenance (article 15)	This law is related to is related to the proposed project through Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted); Output 3.1 (Climate-resilient organic farming support services and value-chain activities delivered).	Integrate soil conservation and erosion-control measures into the design of flood-protection and restoration works; identify areas at risk of erosion; implement stabilization and restoration measures following construction. Responsible institutions: ORMVAO/ADA, in coordination with the competent agricultural and local authorities
Law 01-06 on Sustainable Development of Palm Groves and Protection of Date Palm (Phoenix dactylifera)	Protects palm groves, regulates interventions affecting date palms and promotes their sustainable management.	Law 01-06 on Sustainable Development of Palm Groves and Protection of Date Palm (Phoenix dactylifera) is related to the proposed project through Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established), Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted).	Ensure that palm-grove cleaning, maintenance, restoration and fire-prevention activities comply with applicable technical requirements; coordinate interventions with competent agricultural authorities; avoid damage to date palms and associated oasis ecosystems.

Standard / Policy/Framework	Scope and Relevance to the Project	How it relates to the proposed project	Steps to be taken to ensure compliance
			Responsible institutions: ORMVAO/ADA and relevant oasis/agricultural authorities
<i>Labour Code (Law n°65-99) and Occupational Safety and Health Conventions (Act n°16-12; Act n°18-12)</i>	<i>Defines labour rights, occupational safety standards, and worker compensation obligations.</i>	<i>This Law is related to the proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established); Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established); Output 2.1 Climate-resilient water points and livestock infrastructure established for pastoral communities); Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted)</i>	<i>Include labour and occupational health and safety requirements in procurement and contractor contracts; provide appropriate PPE and safety measures; ensure worker insurance and incident reporting; monitor contractor compliance throughout works.</i> Responsible institutions: ADA/ORMVAO and contractors, with oversight by the competent labour authorities.
<i>Organic Law 113-14 on Communes</i>	<i>Decentralises local governance and assigns responsibilities for infrastructure planning and approvals.</i>	<i>This Law is related to the proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established); Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established); Output 2.1 (Climate-resilient water points and livestock infrastructure established for pastoral communities); Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted)</i>	<i>Engage municipal councils in the co-design and validation of infrastructure; obtain the required local authorisations and approvals prior to implementation; and ensure coordination with relevant municipal technical services throughout planning, construction and monitoring.</i>
<i>Dahir of 1914 on the Public Domain</i>	<i>Governs the use, protection, and occupation of public land</i>	<i>It is related to the proposed project through Output 1.1 Water infrastructure rehabilitated and climate-resilient water access systems established); Output 2.1 (Climate-resilient water points and livestock infrastructure established for pastoral communities); Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted)</i>	<i>Verify land status before construction; obtain the required occupation/use authorization for public-domain land; maintain records of approved sites and permits.</i> Responsible institutions: relevant local authorities/communes and competent public-domain authorities, with ADA/ORMVAO.
<i>Law n°22-07 on Protected Areas</i>	<i>Ensures the protection of biodiversity and ecosystems within designated conservation zones, and provides a framework for their conservation, restoration, and sustainable use</i>	<i>This Law is related to the proposed project through Output 2.2 (Degraded oasis and rangeland lands restored and biodiversity-friendly aromatic and medicinal plant management promoted); Output 3.1: Climate-resilient organic farming support services and value-chain activities delivered</i>	<i>Screen proposed sites against protected-area boundaries and biodiversity sensitivities; avoid interventions that could adversely affect protected areas; where relevant, obtain validation from competent environmental/forestry authorities before implementation.</i> Responsible institutions: ANEF/HCEFLCD and ADA/ORMVAO
<i>Framework Law n°97-13 on the Rights of Persons with Disabilities</i>	<i>Promotes accessibility and inclusion in public infrastructure and services.</i>	<i>It relates to the proposed project through Output 3.2 (Training and capacity-building services for farmers and local organizations delivered); Output 3.3 (Youth- and women-focused agricultural entrepreneurship and employment support services provided)</i>	<i>Integrate accessibility requirements into the design of relevant facilities, training venues and public infrastructure; verify accessibility during design review and works supervision.</i> Responsible institutions: ADA/ORMVAO and relevant municipal technical services.
<i>Law n°103-13 on Combating Violence Against Women</i>	<i>Establishes measures to prevent gender-based violence, promote gender equality, empower youth, and protect vulnerable groups</i>	<i>It relates to the proposed project through Output 3.2 (Training and capacity-building services for farmers and local organizations delivered); Output 3.3 (Youth- and women-focused agricultural entrepreneurship and employment support services provided)</i>	<i>Integrate gender-sensitive and GBV-prevention measures into stakeholder engagement, training and livelihood activities; establish safe participation arrangements and accessible grievance channels; monitor participation and reported concerns.</i> Responsible institutions: ADA/PMU and ORMVAO, in coordination with local authorities and participating community organizations.
<i>Law n°09-21 on Social Protection</i>	<i>Expands social protection coverage for vulnerable populations.</i>	<i>It relates to the proposed project through Output 3.2 (Training and capacity-building services for farmers and local organizations delivered); Output 3.3 (Youth- and women-focused agricultural entrepreneurship and employment support services provided)</i>	<i>Ensure that project-generated employment, training and livelihood opportunities are implemented in an inclusive manner and, where appropriate, facilitate links with relevant national social-protection programmes.</i> Responsible institutions: ADA/PMU, ORMVAO and relevant local/professional institutions.

Standard / Policy/Framework	Scope and Relevance to the Project	How it relates to the proposed project	Steps to be taken to ensure compliance
Disaster Risk Management Framework	Establishes early warning systems, emergency preparedness, and disaster response protocols.	This law relates to the proposed project through Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established)	Coordinate the wildfire early-warning system, emergency water points and preparedness measures with the competent disaster-management authorities; establish communication and response protocols and test them periodically. Responsible institutions: Civil Protection Directorate / Ministry of Interior, in coordination with ADA/ORMVAO and local authorities
National Building Code & Local Construction Bylaws	Governs structural design and safety for public infrastructure.	It relates to the proposed project through Output 1.1 (Water infrastructure rehabilitated and climate-resilient water access systems established); Output 1.2 (Wildfire prevention, risk reduction and early-warning measures established)	Ensure that engineering designs comply with applicable construction and safety standards; obtain municipal/competent technical approval before construction; supervise works and certify compliance upon completion. Responsible institutions: relevant municipal engineering services and competent technical authorities, with ADA/ORMVAO

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

121. The project will help to strengthen the dynamics of integrated territorial development in the oases and will complement actions already undertaken, completed or planned (i) by the Moroccan Government as part of the Regional Agricultural Plan drawn up as part of the new Agricultural Strategy for 2030 "Generation Green", particularly the programme for the Draa basin, (ii) projects financed within the framework of multilateral or bilateral cooperation. The proposed adaptation project does not duplicate existing initiatives financed by other sources; rather, it complements and reinforces ongoing and planned climate adaptation efforts in Morocco.

Table 9: Project duplication with other funding sources

Climate changes adaptation project in oasis zones – PACC-ZO (2015-2020)	
Description and objectives	The PACC-ZO project, financed by the Adaptation Fund, aimed to improve the adaptability of populations in Oasis areas to the impacts of climate change. The project specifically focused on improving the adaptive capacity of the water sector, diversifying livelihoods, and enhancing the living conditions of populations vulnerable to climate change in the targeted areas. It also sought to strengthen ecosystem resilience to climate change and variability, raise awareness among all stakeholders through effective knowledge management and sharing, and build the capacities of participants in designing and implementing adaptation measures. The PACC-ZO project mainly covers two areas such as the Intermediate Gheris Basin and the Maider Basin.
Complementarity and synergy	By focusing on strengthening the ecological and socio-economic resilience of pastoral systems in oasis regions, promoting the cultivation, processing, and marketing of local aromatic and medicinal plants, and fostering sustainable, climate-resilient livelihoods while empowering vulnerable groups, particularly women and youth, this proposed project will complement the interventions implemented under PACC-ZO. Together, both projects are complementary to enhance the resilience and adaptive capacity of oasis ecosystems and vulnerable communities to the impacts of climate change in Morocco
Lessons learned	- Strong community acceptance improved local adaptation, but limited coverage generated frustration among non-beneficiaries. Future projects must address equity and expectation management at community scale. - Associations and cooperatives became credible local partners. Strengthening these structures improved governance, dialogue with public institutions, and access to partnerships and funding. - Capacity building was effective but poorly measured. Training increased skills and awareness, yet weak monitoring and qualitative evaluation limited understanding of real and lasting impacts. - Integrated actions require clearer institutional roles. Multi-sector interventions exposed coordination limits. Agricultural institutions should facilitate, not substitute, other sectors, and income diversification must follow value chain and micro-enterprise logic to be sustainable.
Outputs of the proposed project reflecting the lessons learned	Equity and inclusion: Outputs 2.1, 2.2, 3.2 and 3.3, through targeted beneficiary selection and participation of vulnerable groups. Local organizations and cooperatives: Outputs 3.2 and 3.3, through capacity building and support to cooperatives and enterprises. Monitoring of capacity building and results: Outputs 4.1 and 4.2, through the MEKM system, reporting and learning activities. Institutional coordination and integrated livelihood development: Outputs 1.1, 1.2, 2.1, 2.2, 3.1, 3.2 and 3.3, implemented through coordinated institutional and value-chain approaches.
Duplication	There is no duplication, because PACC-ZO has been implemented in the Intermediate Gheris Basin and the Maider Basin, whereas the proposed adaptation project will be carried out in the Draa Basin.
Revitalising Oasis Agro-ecosystems through a Sustainable, Integrated and Landscape Approach in the Draa-Tafilalet Region (OASIL) (2017-2021)	
Description and objectives	OASIL financed by the Global Environment Facility (GEF) and co-financed by the FAO and the Moroccan Government, the project aimed to improve oasis agroecosystems to make them more productive, resilient, and sustainable, while supporting local livelihoods in Morocco's Draa-Tafilalet region. OASIL intends to achieve this objective working along 4 components such as: (i) Component 1 - Policy dialogue (Support policy dialogue at the national and regional levels on the sustainable management); (ii) Component 2 -

	Planning and monitoring (Improvement of Natural Resource Management and Sustainable Production Intensification planning and monitoring systems at regional and local level of oasis agro-ecosystems); (iii) Component 3 - Pilot demonstration (Sustainable and integrated oasis agro-ecosystem management and investment plans are implemented in pilot oasis ecosystems in at least 2 sub-drainage basins); and (iv) Component 4 - Monitoring, evaluation and knowledge management.
Lessons learned	- Design flexibility and strategic focus must be balanced. Early definition of flexibility supports adaptation, while clear limits during implementation preserve coherence and intervention logic - Strong local partnerships and inclusive governance increase ownership, relevance, and sustainability. Active stakeholder engagement underpins credibility and long-term continuity. - Effective internal coordination across components is essential. Weak synchronization and delays reduce overall performance and limit synergies. - Robust monitoring, evaluation, and knowledge systems are critical. Weak outcome indicators, limited data, and poor capitalization constrain impact assessment, learning, and replication.
Complementarity and synergy	OASIL strengthened the resilience of local communities, promoted the sustainable management of water, land, and biodiversity, enhanced the protection of vital oasis ecosystems, fostered the sustainability of oasis agro-systems, and diversified livelihoods through an integrated landscape approach based on multi-level, multi-sectoral, and multi-stakeholder participation. The proposed project will build on the actions undertaken by OASIL to strengthen ecosystem integrity and community resilience by promoting sustainable natural resource management, nature-based solutions, disaster risk reduction. The proposed adaptation project will equally promote local aromatic and medicinal crops adapted to the climatic conditions of upstream palm groves, promote organic date farming as an agroecological diversification strategy, and develop the oasis product value chain to enhance productivity and ensure food security in the targeted areas.
Outputs of the proposed project reflecting the lessons learned	Strategic and adaptive implementation: Outputs 4.1 and 4.2 , through the MEKM framework and regular learning and reflection. Inclusive local partnerships: Outputs 2.1, 2.2, 3.2 and 3.3 , through engagement of pastoral groups, cooperatives, women, youth and local organizations. Cross-component coordination: Outputs 1.1, 1.2, 2.1, 2.2, 3.1, 3.2 and 3.3 , supported by coordinated implementation arrangements. Monitoring, learning and replication: Outputs 4.1 and 4.2 , including the MEKM system, reports, learning exchanges and knowledge products.
Duplication	No duplication. Although both projects (OASIL and the proposed project) target the Drâa region, the proposed adaptation project will operate specifically in the Drâa Basin and focus on different localities for its interventions.
Sustainable management of oasis ecosystems in Morocco project (2024-2026)	
Description and objectives	The project is financed by the World Bank and aims to strengthen the sustainable oasis ecosystems management for climate resilience in Aoufouss and Akka and develop a national standard for integrated oasis management. This project has three components such as: (i) Institutional Strengthening and Sharing of Innovative Oasis Knowledge, has the following sub-components; (ii) Restoration of Oasis Ecosystems and Livelihoods; and (iii) Project Management will support project management, communication, monitoring, and implementation at the national and regional levels.
Complementarity and synergy	The "Sustainable management of oasis ecosystems in Morocco project" Supported capacity building for locally led climate action, development of a gender strategy for ANDZOA, and of strengthening risk management systems; development of national guidelines for preparing gender and climate-sensitive Integrated Local Development Plan; and development and dissemination of a national framework for integrated Oasis management. It also promotes innovative solutions geoinformatics platform, restoration of Oasis landscapes and ecosystem services, improves and enhances the economic, social, and environmental sustainability of the livelihoods of vulnerable groups. The proposed project will supplement activities undertaken in the "Sustainable management of oasis ecosystems in Morocco project" to strengthen the resilience and adaptive capacity of oasis ecosystems and vulnerable communities to the impacts of climate change in the project areas by promoting organic farming, improving marketing channels. It will also work to valorize and label local products, support innovative ideas and projects benefiting women. Both Projects are complementary to improve the living conditions of populations and foster good health of the oasis ecosystems. There is synergy between the "Sustainable Management of Oasis Ecosystems in Morocco" project and the proposed project, as both aim to improve the management of oasis landscapes and strengthen the resilience of ecosystems and vulnerable communities exposed to climate impacts.
Lessons learned	- Integrated systems thinking. Environmental adaptation, social dynamics, and local economies treated as one connected system in project design. - Community ownership and participation. Local stakeholders given decision power, capacity, and funding through bottom up and demand driven processes. - Simple and decentralized implementation. Lean institutional setup, local execution for remote areas, clear coordination, and an active grievance mechanism in place from the start.
Outputs of the proposed project reflecting the lessons learned	Integrated adaptation approach: Outputs 1.1, 1.2, 2.1, 2.2, 3.1, 3.2 and 3.3 , combining ecosystem, water, livelihood and social dimensions. Community ownership and participation: Outputs 2.1, 2.2, 3.2 and 3.3 , through participatory implementation and support to local organizations, women and youth. Decentralized coordination and adaptive management: Outputs 4.1 and 4.2 , through the MEKM system, stakeholder learning and knowledge sharing.
Duplication	There is no duplication. Only the activities in Akka is situated in Drâa basin, while Aoufouss are not. In addition, the interventions of the proposed project will be carried out in localities different from those of Akka.
Development Project of Saffron and Date Palm in the region of Draa Tafilalet and Souss-Massa (2013-2019)	
Description and objectives	This project was financed by Belgium and aimed to (i) Develop and enhance the value of the saffron sector in a more equitable and sustainable way in the Taliouine Circle and in the Taznakht area; and (ii) Develop and enhance the value of the date sector in a more equitable and sustainable way in the ORMVAO's area of action. It also sought to improve the income of rural families through increased production and productivity, improved product quality and value, and advantageous access to markets. The project covered 4 provinces, namely: Taroudant Province (Souss-Massa Region); Ouarzazate Province, Tinghir Province and Zagora Province (Drâa-Tafilalet Region).
Complementarity and synergy	The proposed adaptation project will reinforce the "Development Project of Saffron and Date Palm in the region of Draa Tafilalet and Souss-Massa" project interventions in the Drâa basin, common to the two projects. Nature-based, reduced vulnerability of oasis ecosystems to wildfire risks, increased support for organic oasis farming to climate change promoted by the proposed project will

	supplement interventions supported by the “Development Project of Saffron and Date Palm in the region of Draa Tafilalet and Souss-Massa” project to build resilience of vulnerable communities in Drâa basin.
Lessons learned	• Strong technical partnerships. Preexisting relationships with implementing partners improve project design and secure effective operational implementation. • Proximity based support and participation. Participatory approaches and social engineering require time and continuous field presence, but they deliver more sustainable results than outsourced or purely technical interventions. • Territorial approach and governance. Value chain development must be complemented by an integrated territorial vision, with producer organizations strengthened through good governance and member-oriented services. • Social inclusion and sustainability. The integration of gender, functional literacy, and risk reduction logics enhances sustainability and supports the empowerment of women and rural communities.
Outputs of the proposed project reflecting the lessons learned	Technical partnerships and field-based implementation: Outputs 1.1, 1.2, 2.1, 2.2, 3.1, 3.2 and 3.3 , through collaboration with technical institutions and local organizations. Participation and proximity-based support: Outputs 2.2, 3.2 and 3.3 , through community engagement, training and entrepreneurship support. Territorial and value-chain approach: Outputs 2.2, 3.1 and 3.3 , through aromatic and medicinal plants, oasis products and climate-resilient value chains. Gender and social inclusion: Outputs 3.2 and 3.3 , with dedicated support to women and youth.
Duplication	No duplication, because the proposed project will support the improvement of the resilience of pastoral ecosystems and livestock herders' livelihood by building new diversion weirs and reinforcing existing ones, installing solar-powered boreholes to support the irrigation of palm groves and reduce dependence on surface water during drought periods, and building 15 km of flood protection walls (masonry or gabion) to safeguard agricultural land and irrigation infrastructure. In addition, the proposed project will operate in localities different from those of the “Development Project of Saffron and Date Palm in the region of Draa Tafilalet and Souss-Massa” project.

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

122. Knowledge management is essential to learning and the project cycle. The project will implement targeted actions to capture, manage, and share information. Overseen by the Project Management Unit (PMU) and led by the M&E Officer in collaboration with stakeholders, the Monitoring, Evaluation, and Knowledge Management system will also track access to project benefits across vulnerable groups and geographic locations, including women, youth, smallholder farmers, pastoralists, and upstream/downstream communities, using disaggregated indicators to support adaptive management and equitable implementation. The system will: (i) analyze, generate, and share policy briefs, technical reports to inform adaptive management and guide project decisions; (ii) provide timely progress and impact reports to national authorities, Implementing Entity ADA and partners. Learning and Knowledge Management activities will include:
- annual reflection workshops to validate findings, identify gaps, and integrate lessons into ongoing activities.
 - Peer-to-peer learning exchanges among communities to share good practices in water management, fire prevention, and livelihood diversification.
 - A digital repository housing reports, training materials, and case studies, accessible to all stakeholders.
123. Public dissemination through community meetings, media releases, and online platforms will ensure knowledge products reach decision-makers and practitioners, promoting replication of successful approaches beyond the project's lifespan.

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

124. The project idea emerged from a comprehensive, inclusive, and iterative participatory diagnostic process led by the National Agency for the Development of Oasis and Argan Tree Areas, in close coordination with the decentralized services of the Ministry of Agriculture and Maritime Fisheries, local authorities, and a broad range of local stakeholders. These stakeholders included development associations, cooperatives, professional agricultural organizations, pastoral representatives, women's associations, youth groups, and civil society organizations active within the targeted intervention zones. This participatory approach was central to identifying priority needs, ensuring that proposed actions are context-specific, and fostering strong local ownership, which is essential for the effective implementation and long-term sustainability of the project's adaptation measures. The stakeholder consultation process, methodology, participants, and key findings are

fully documented in the [Stakeholder Consultation Report](#) for the Drâa Valley Oasis Climate Resilience.

125. *The consultation methodology was participatory, inclusive, and adapted to the local context. It combined: (i) open community workshops to promote collective dialogue; (ii) focus group discussions with women, youth, pastoralists, civil society organizations, and local leaders; (iii) the collection of individual and collective inputs; and (iv) qualitative assessments of local constraints, vulnerabilities, and practical recommendations for climate adaptation. Through this consultation process, marginalized and vulnerable groups were explicitly identified, including smallholder farmers, women, youth, and transhumant pastoralists, who face heightened climate risks related to water scarcity, land degradation, heat stress, wildfire exposure, and livelihood insecurity. The consultations did not identify Indigenous Peoples, as defined under international safeguard standards, as communities in the project area are long-established oasis populations fully integrated within national administrative, legal, and social systems.*
126. *Initial stakeholder engagement began with targeted consultations led by ORMVAO, in collaboration with beneficiary communities, technical partners, and civil society actors. These consultations were informed by a detailed analysis of existing environmental and socio-economic constraints, as well as lessons learned from previous programmes, and served as the foundation for defining the project's objectives, expected results, and preliminary intervention options. A first field assessment and participatory rural appraisal mission was conducted from 11 to 14 June 2024 across the six major palm groves of the Drâa Valley, namely Skoura, Mezguita, Tinzouline, Ternata, Fezouata, and Ktaoua. The mission was carried out by an oasis expert accompanied by ORMVAO head office and Zagora field staff, using on-site prospecting, transect walks, direct observation of ecosystem degradation, and informal exchanges with farmers on their plots to understand current irrigation practices and local climate-related constraints. As this exercise was primarily a technical field assessment and participatory diagnosis, formal attendance numbers, a detailed participant list, and disaggregated group composition were not recorded. This limitation was communicated to the Adaptation Fund Secretariat and justified the organization of a second, more structured consultation process in January 2026, with documented attendance, group composition, and dedicated engagement with women, youth, community representatives, and institutional stakeholders. The June 2024 mission nevertheless informed the project design by identifying priority constraints and adaptation needs, including increasing drought stress and palm desiccation from upstream to downstream, wildfire risks linked to dry palm clusters, riverbank erosion in upstream and intermediate palm groves, salinity and sand encroachment in downstream areas, degraded diversion weirs, irrigation canals and khetaras, and the need to strengthen community resilience through water-saving irrigation, improved value chains, and income-generating activities for women and youth. These findings were incorporated into the project through activities on water mobilization, solar-powered boreholes, khetara and seguia rehabilitation, flood protection, fire prevention, anti-sand encroachment, organic and local product development, and women's and youth entrepreneurship support.*
127. *To further strengthen ownership, address the documentation gaps from the June 2024 field assessment, refine targeting of vulnerable groups, and ensure full alignment with Adaptation Fund requirements, a second and more structured round of stakeholder consultations was undertaken on 21–22 January 2026 in Agdez and Zagora. This consultation round included attendance lists and brought together 79 participants, including 41 women and 11 youth, as well as representatives of ORMVAO technical services, local authorities, AUEAs, smallholder farmers, cooperatives, women's cooperatives, youth groups and transhumant pastoralists. The consultation process used segmented focus group discussions to facilitate open participation, including women-only workshops in Agdez and Zagora, dedicated youth workshops, and farmers' and transhumant herders' sessions focused on water access, pastoral mobility, fire risk, and climate-resilient livelihoods. The January 2026 consultations confirmed the relevance of the proposed intervention package and provided concrete feedback that was integrated into the project design. Farmers and AUEAs emphasized the high cost of diesel and butane pumping, degradation of khetaras and seguias, risk of wildfire from dry palm biomass, riverbank erosion in upstream areas, and salinity and sand encroachment in downstream areas. These concerns were addressed through the inclusion of solar-powered boreholes, rehabilitation of khetaras and seguias, emergency water points and fire-prevention measures, flood protection walls, and dune fixation. Transhumant herders raised concerns about water access conflicts, lack of shade, and livestock exposure to heat stress; these were addressed through dedicated solar-powered livestock water points and livestock shelters located outside agricultural zones.*
128. *Specific women's and youth consultations also shaped the gender and livelihood design of the project. Women requested support for value addition, processing, labelling, market access, and income-generating activities linked to dates, Tahloute date syrup, aromatic and medicinal plants, henna, couscous, compost, and handicrafts. Youth emphasized the need for green entrepreneurship, training, solar maintenance, mechanized*

services, digital marketing, ecotourism, business coaching, and access to incubators. These recommendations were incorporated through dedicated support for women- and youth-led cooperatives and enterprises, business development training, technical and management training, value-chain development, access to microfinance and start-up support, participation targets for women and youth, and inclusion of women and youth in local governance and monitoring mechanisms.

129. To demonstrate inclusion and local representation, [the attendance lists for the Agdez and Zagora consultations](#) highlight local leaders and representatives, including AUEA leaders, cooperative leaders, women's cooperative or association leaders, youth leaders, farmers and transhumant pastoral leaders. They supported participant mobilization, facilitated dialogue with vulnerable groups, and helped validate priority needs and proposed project activities related to water access, irrigation infrastructure, wildfire prevention, pastoral resources, livelihood diversification, women's economic empowerment, and youth employment. The consultations strengthened consensus around priority actions under the four project components and ensured coherence with local development plans, ORMVAO strategic priorities, and ongoing initiatives in the Drâa Basin. This iterative consultation process, reinforced stakeholder ownership, minimized risks of exclusion or conflict, and ensured that project interventions respond directly to the differentiated needs and capacities of vulnerable groups, in full compliance with the Adaptation Fund's Environmental and Social Policy and Gender Policy.

Initial Gender Assessment (IGA) – Summary

130. The IGA, conducted based on gender-segregated consultations in Agdez and Zagora, highlights significant gender inequalities in oasis communities and provides the basis for the project's gender-responsive design. Women represent approximately 51% of the oasis population, corresponding to nearly 1.1 million women, of whom 61% live in rural areas and depend heavily on climate-sensitive livelihoods⁶¹. Despite their central role in household water management, oasis agriculture, livestock-related activities, processing of local products, and household food security, women remain underrepresented in formal employment, income-generating activities, and natural resource governance.
131. Women face very low participation in formal employment, with only about 14.4% of women in oasis areas engaged in the workforce, despite their substantial contribution to agricultural and household labour^{62,63}. Education gaps further constrain socioeconomic empowerment: illiteracy rates exceed 80% in some rural zones⁶⁴, uneducated women constitute nearly 79% of the rural labour force, and this proportion surpasses 90% in some marginalized areas^{65,66}. These gaps severely limit women's access to technical and climate-related training, financial services, productive assets, digital tools, entrepreneurship opportunities, and leadership spaces⁶⁷.
132. Women also face persistent barriers to financial inclusion, as only around 34% of Moroccan women hold a bank account compared to 66% of men, limiting access to savings, credit, and investment opportunities⁶⁸. Women entrepreneurs and cooperatives often face weak support networks, limited market access, inadequate infrastructure, and insufficient tailored business development services⁶⁹.
133. In Morocco's oasis regions, deeply rooted gender norms shape markedly different socio-economic conditions for men and women. Women carry out an estimated 60% of agricultural production in oasis areas, yet they have unequal access to land rights, owning less than 1% of resources and holding only 2% of the land, as well as to decision-making, agricultural inputs, water, information, technologies, and extension services⁷⁰. Women's land ownership remains extremely limited, with plots often averaging only around 0.8 hectares in oasis and marginal rural areas, and frequently shared with relatives⁷¹. Inheritance systems, whereby women

⁶¹ World Bank. (2024). Morocco Sustainable Oasis Ecosystems Management Project (P500402) (Report No. PAD00100). International Bank for Reconstruction and Development. <https://documents.worldbank.org/https://documents1.worldbank.org/curated/en/099052024100019069/pdf/P5004021937c01041a4f812852b0295ec9.pdf>

⁶² Ibid

⁶³ Mansuy, M., & Werquin, P. (2018). Moroccan youth and employment: Gender differences. *Journal of Education and Work*. <https://doi.org/10.1080/13639080.2018.1541504>

⁶⁴ Montanari, B., & Bergh, S. I. (2019). A gendered analysis of the income generating activities under the Green Morocco Plan: Who profits? *Human Ecology*, 47, 409–417. <https://doi.org/10.1007/s10745-019-00086-8>

⁶⁵ Montanari, B., & Bergh, S. I. (2019). A gendered analysis of the income generating activities under the Green Morocco Plan: Who profits? *Human Ecology*, 47, 409–417. <https://doi.org/10.1007/s10745-019-00086-8>

⁶⁶ Bachiri, H. (2021). Illiteracy effects on local development in the Moroccan rural world: Challenges and recommendations. *Linguistic Forum*, 3(1), 19–24. <https://doi.org/10.53057/linfo/2021.3.1.4>

⁶⁷ Matei, G. F., & Laachach, A. (2025). Empowering women, enhancing sustainability: Exploring the transformative impact of female-led agricultural cooperatives on SDGs in Morocco. *Sustainable Development. Advance online publication*. <https://doi.org/10.1002/sd.70614>

⁶⁸ World Bank. (2015). Morocco: Mind the gap—Empowering women for a more open, inclusive, and prosperous society. World Bank Group. <https://openknowledge.worldbank.org/server/api/core/bitstreams/754ad574-844f-5d29-b9e9-e017c3ca04d1/content>

⁶⁹ Bouichou, E. H., Benbrahim, F. Z., & Fadlaoui, A. (2024). Entrepreneurship and rural development in Morocco: A comparative analysis of female and male entrepreneurs in the Fes-Meknes region. *Research on World Agricultural Economy*, 5(4), 313–332. <https://doi.org/10.36956/rwae.v5i4.1181>

⁷⁰ Houzir, M. (2017). Femmes oasiennes et changement climatique au Maroc. Fondation Heinrich Böll – Bureau Afrique du Nord.

⁷¹ Croppenstedt, A., Goldstein, M., & Rosas, N. (2013). Gender and agriculture: Inefficiencies, segregation, and low productivity traps. *The World Bank Research Observer*, 28(1), 79–109. <https://doi.org/10.1093/wbro/lks024>

Matei, G. F., & Laachach, A. (2025). Empowering women, enhancing sustainability

commonly inherit only half the share allocated to men, further weaken women's adaptive capacity, tenure security, and long-term resilience. More broadly, women farmers continue to have significantly lower access than men to credit, technologies, extension services, and agricultural decision-making structures despite their major contribution to agricultural labour and local livelihoods^{72,73}. Their contributions also remain unpaid, informal, and insufficiently recognised in economic and governance structures, while traditional gender roles continue to assign women primarily reproductive and domestic responsibilities, limiting their economic independence, mobility, and access to opportunities.

134. Cooperatives and local livelihood initiatives have created partial opportunities for economic participation, but their transformative impact often remains constrained by unequal power relations, weak legal enforcement, and the exclusion of women from meaningful control over resources and governance processes. Nationally, women represent only 29% of cooperative members, although 39% of women's cooperatives operate in the agricultural sector⁷⁴, reflecting both their important engagement in rural livelihoods and the persistent structural barriers limiting their economic empowerment. In many rural and marginal areas, women's agricultural labour is essential for household survival and resilience, yet rarely translates into greater autonomy, decision-making power, or secure control over productive resources. This is particularly evident in local water governance and decision-making structures, including Agricultural Water Users' Associations (AUEAs), which play a central role in collective resource management and water allocation, yet continue to exhibit very low levels of women's representation and influence.
135. Climate change is further intensifying these inequalities. Recurrent droughts, declining water availability, salinization, heat stress, land degradation, and wildfire risk increasingly leave women managing farms, households, livestock-related tasks, and local production activities without secure access to productive assets, formal recognition, or adequate representation in community-level decision-making. Consultations with women in Agdez and Zagora highlighted limited income-generating opportunities and a strong interest in climate-resilient livelihood activities linked to oasis value chains, including date processing, aromatic and medicinal plants, natural products, labelling, and other value-added enterprises. These findings confirm that women are not only disproportionately affected by climate impacts but also represent a critical driver of adaptation and resilience when provided with access to skills, finance, markets, technologies, and inclusive governance platforms.
136. In response, the project integrates measurable gender targets and dedicated activities across its components. At least 40% of direct beneficiaries and training participants will be women, and women's representation in local governance structures, including AUEAs, palm grove associations, pastoral associations, cooperatives, and community management committees, will be strengthened through inclusive participation mechanisms, multi-criteria beneficiary selection, and targeted leadership and capacity-building support. Building on Components 2 and 3, the project will enhance women's economic empowerment by supporting women-led cooperatives, including those engaged in aromatic and medicinal plants, and by promoting entrepreneurship development, business training, value addition, certification, packaging, and marketing of climate-resilient oasis products such as organic dates, aromatic and medicinal plants, alongside facilitated access to microfinance and start-up support. Targeted training sessions will be organized for women and youth to strengthen their adaptive capacities, encourage their active participation in agricultural value chains, and promote gender equality in resource governance, with overall project commitments of training at least 3,000 people and creating or strengthening at least 150 cooperatives, micro, and small enterprises with a strong emphasis on women- and youth-led initiatives. The project will also strengthen women's participation in local resource governance and adaptation planning through gender-responsive participatory processes, equity-sensitive beneficiary selection criteria, and institutional support to AUEAs, cooperatives, women's and youth groups, and community-based organizations, ensuring that adaptation benefits are equitably distributed across upstream and downstream communities.
137. These measures are expected to drive long-term change in gender dynamics by shifting women's roles from largely unpaid, informal, and weakly recognized contributions toward visible economic, entrepreneurial, and governance functions within oasis adaptation systems. Increased access to productive assets, technical knowledge, climate information, markets, and finance will strengthen women's income security and bargaining power within households, while their participation in AUEAs, cooperatives, and local planning processes will improve the responsiveness of water allocation, ecosystem restoration, and livelihood decisions to women's

⁷² Nyberg, Y., Mackay, H., Wilson, M., Samkunde, M., & Wetterlind, J. (2025). Supporting access and implementation of agricultural extension services for female smallholder farmers – a systematic review. *International Journal of Agricultural Sustainability*, 23(1). <https://doi.org/10.1080/14735903.2025.2505387>

⁷³ Boudalia, S., Teweldebirhan, M. D., Ariom, T. O., Diouf, N. S., Nambeye, E., Gondwe, T. M., Mbo'o-Tchouawou, M., Okoth, S. A., & Huyer, S. (2024). Gendered gaps in the adoption of climate-smart agriculture in Africa and how to overcome them. *Sustainability*, 16(13), 5539. <https://doi.org/10.3390/su16135539>

⁷⁴ Ibourk, A., & Hninou, S. (2025). Empowering women through agricultural cooperatives: A multilevel analysis in Morocco's Marrakech-Safi region. *Discover Sustainability*, 6, 559. <https://doi.org/10.1007/s43621-025-01245-2>

needs and knowledge. Over time, the project will help normalize women's leadership in climate adaptation, reduce structural barriers to their economic participation, support intergenerational transfer of skills to young women, and institutionalize more inclusive and equitable governance systems within oasis communities. Progress toward these gender-related changes will be monitored through sex- and age-disaggregated indicators under the project M&E system, including the number and percentage of women trained, women benefiting from livelihood and entrepreneurship support, women-led cooperatives strengthened, women accessing market and financing opportunities, and women participating in AUEAs and cooperatives. The participatory identification of priority actions is summarized in the following table.

Table 10: Participatory identification of priority actions

Steps	Description of the Consultative Process	Key Outcomes
Participatory diagnosis and needs assessment (June 2024)	Field consultations conducted from 11–14 June 2024 across the six palm groves of the Drâa Valley, involving smallholder farmers, cooperatives, Agricultural Water Users Associations (AUEAs), pastoral representatives, women's associations, youth groups, civil society organizations, and local authorities. Site inspections and focus group discussions were used to assess climate risks, ecosystem degradation, livelihood constraints, and institutional gaps.	• Identification of key climate risks (drought, water scarcity, floods, wildfires, dune encroachment, land degradation). • Clear articulation of differentiated vulnerabilities of farmers, pastoralists, women, and youth. • Strong demand for improved water management, livelihood diversification, and ecosystem restoration.
Participatory identification of priority actions	Through a consensus-based process , stakeholders jointly identified and validated priority interventions structured around four components: C1 – Strengthening the adaptive capacity of oasis ecosystems: water resource management, soil restoration, fire prevention, dune stabilization, rehabilitation of khettaras and irrigation infrastructure. C2 – Enhancing resilience of pastoral ecosystems and livelihoods: rangeland restoration, water points for livestock, conflict reduction between farmers and pastoralists, drought resilience. C3 – Diversifying climate-resilient livelihoods and promoting inclusion: support to women- and youth-led enterprises, value chains (dates, PAMs, natural cosmetics), organic certification, agro-ecotourism. C4 – Strengthening adaptive management and learning: establishment of a Monitoring, Evaluation and Knowledge Management (MEKM) system for adaptive management and replication.	• Four project components clearly defined and agreed upon. • Interventions grounded in local priorities and technical assessments. • Explicit integration of gender, youth, and pastoralist considerations. • Strong stakeholder ownership of proposed measures.
Community-identified priorities (June 2024 & Jan 2026)	Communities emphasized the need for practical, income-generating, and climate-resilient solutions, particularly for vulnerable groups. Priorities raised included training, market access, entrepreneurship, and valorization of local products.	• Training farmers on water-saving irrigation techniques. • Improved marketing channels for oasis products. • Promotion of organic dates and high-value products • Recycling oasis by-products (compost, feed, mulching). • Support to women's and youth entrepreneurship, cooperatives, and income-generating activities. • Development of agro-ecotourism (ecolodges, guesthouses, guides).
Validation and refinement (January 2026)	A second round of consultations was held on 21–22 January 2026 with ORMVAO, local authorities, AUEAs, cooperatives, women's and youth groups, and pastoral representatives to validate the refined project design, confirm beneficiary targeting, and strengthen gender and inclusion measures.	• Validation of project design and beneficiary targeting. • Confirmation of relevance of livelihood, water, and wildfire components. • Strengthened alignment with local development plans and ORMVAO strategy. • Reinforced consensus and readiness for implementation.
Final alignment and consolidation	Final feedback sessions consolidated community inputs, technical findings, and institutional priorities, ensuring coherence with regional strategies and complementarity with ongoing programmes.	• Alignment with regional, provincial, and communal development plans. • Avoidance of duplication with other initiatives. • Optimized synergies and efficient use of resources.

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

138. According to the IPCC's 4ème climate assessment report, many countries have stressed that the major challenge for the future is the need for international support for the implementation of their National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs). In terms of mitigation, Morocco has set a target of reducing its GHG emissions about 45.5% by 2030, through support from the international community. Morocco has also committed an unconditional target of reducing GHG emissions by 18%. The overall target of 45.5% requires an investment estimated at around US\$50 billion between 2010 and 2030. The conditional target requires the mobilization of an investment estimated at US\$24 billion and is conditioned by access to new sources of financing and additional support, compared to that received in recent years. For the period 2020–2030, Morocco has estimated that the cost of implementing adaptation programs in the water, forestry and agriculture sectors, which are the sectors most vulnerable to climate change, requires more than 35 billion US dollars. Morocco's Green Investment Plan focuses on an urgent need that concerns approximately 2.5 billion USD.

139. Morocco's oases in general, and those in the project area (Draa Valley) in particular, are being heavily impacted

by the effects of climate change. Indeed, the degradation of Moroccan palm groves has accelerated sharply over the last 10 years, with the loss of almost 2/3 of their palm trees and a third of their production. The factors causing the oases degradation include:

- § Water scarcity, conditioned upstream by the persistence of recurrent droughts and amplified if situ by certain failures in hydro-agricultural and water supply systems.
- § The advance of silting, to the detriment of roads, farmland and the efficiency of water circulation networks (clogging).
- § The shortage of human and financial resources available to operators and local players concerned about the sustainable development of their area.

140. The constraints have contributed to an erosion of the livelihoods of the most vulnerable populations and to an acceleration in the abusive extraction of natural resources, which will logically significantly increase the costs of inaction in the short and medium term. Maintaining the ecosystem services of oases and their economies is crucial and requires major investment. Public action currently remains the only lever for mitigating the risks of an irreversible situation with regard to safeguarding these ecosystems and the many formal and informal jobs linked to them, particularly in the agriculture and ecotourism sectors.

Component 1: Strengthening the adaptive capacity and resilience of the oasis ecosystem

141. **Trend scenario:** The survival of oasis areas depends on the mobilization of water using various techniques. On average, the region receives less than **80 mm of rainfall per year**. 98% is used for agriculture (75% of needs are met). Climate change is expected to exacerbate the risk of fire and disease (notably Bayoud disease, which destroyed 10 million palm trees in a century). Similarly, in the project area, extreme events such as droughts and floods are already common and are expected to become more frequent, reducing soil moisture, accelerating desertification, negatively impacting agricultural productivity, and exerting additional pressure on limited groundwater resources.
142. **scenario with AF project:** Component 1 of the project aims to support activities to adapt and improve the water balance through the sustainable use of conventional water, rainwater harvesting, and groundwater recharge. The project will also support activities to combat flood damage, which threatens agricultural land and water infrastructures, as well as concrete actions to prevent fires. The budget allocated by the AF will enable the financing of the full costs of concrete adaptation measures by improving the efficiency and sustainability of groundwater catchment and irrigation, as well as the sustainable intensification of agricultural production, namely:
- (i) the construction and reinforcement of 10 diversion weirs, (ii) the construction of 20 community boreholes to meet the population's needs for drinking water, irrigation water and livestock watering, (iii) the rehabilitation of traditional hydraulic structures (khetaras) in association with rainwater collection structures.
 - (iv) the construction of 4 flood control weirs and (v) the protection of 15 km of traditional palm groves.
 - (vi) Cleaning date palms to reduce flammable biomass and minimize the risk of fires spreading, (vii) Building access roads inside oases to enable emergency teams to intervene quickly and effectively in the event of a fire, (viii) Installing wells, hydrants and fire hydrants that are permanently accessible, (x) distributing 30 fire-fighting kits to the population to ensure immediate, preventive intervention as soon as a fire breaks out, and lastly (xi) raising public awareness of fire risks and preventive measures, the rational use of natural resources and collective responsibility for preserving our oases.

Component 2: Strengthening community resilience and diversifying socio-economic activities

143. **Trend scenario :** In 2021, the poverty rate among the inhabitants of the oases was 16%, compared to a national average of 9%. The oasis population is vulnerable to climate change. This population is currently trapped in a vicious cycle combining ecological degradation and impoverishment. In the project area, the economic activities that contribute most to the livelihoods of the population (including arboriculture, livestock farming, tourism, crafts, and energy) depend on the continuity of the essential functions fulfilled by the oases in the face of the effects of climate change and other threats.
144. Without urgent investment in strengthening climate-sensitive livelihood activities, the repercussions of the acute and chronic impacts of climate change will severely affect the ability of vulnerable communities in the oasis to secure their livelihoods. These problems are exacerbated by limited access to financing and other sources of income, particularly for women, youth, the elderly, and people with disabilities.

145. **Scenario with the AF Project:** To address this situation, component 2 of the AF project will fund the full costs of adaptation to diversify more climate-resilient livelihood activities and catalyze income generation by prioritizing vulnerable groups. The project actions proposed under component 2 will help to develop more climate-resilient livelihoods in the Draa oases. The logic is to target actions that will have a positive impact on the most vulnerable populations by promoting the products, knowledge, and heritage characteristics of oasis environments. Indeed, activities such as disseminating good practices, building the capacities of professional organizations and project leaders, promoting organic farming, labeling local products, and improving their marketing will (i) increase the added value of the targeted agricultural products and value chains, (ii) improve competitiveness and productivity, and (iii) improve the incomes of vulnerable groups, particularly women and youth. Economic diversification will focus on non-agricultural activities (ecotourism, crafts, etc.) that are less sensitive to the effects of the climate.
146. The proposed project does not require co-financing. All activities and outputs will be fully financed through the Adaptation Fund grant of USD 20 million, which covers the complete cost of delivering the proposed adaptation outcomes. The supported measures are fully concessional, public- and community-based, and do not generate direct financial returns, making them unsuitable for private or commercial co-financing. Project sustainability will be ensured through institutional arrangements, community-based management, and integration into municipal and basin-level planning frameworks, rather than reliance on upfront co-financing.

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

147. The resources requested from the Adaptation Fund are strategically allocated across the project's components to translate targeted outcomes and activities into measurable and lasting adaptation results. By combining climate-resilient infrastructure, ecosystem-based solutions, capacity development, inclusive livelihood diversification, and robust project management, the proposed activities address both immediate climate risks and underlying drivers of vulnerability.
148. Under Component 1: Strengthening the adaptive capacity and resilience of oasis ecosystems, resources are strategically allocated to finance climate-resilient water infrastructure, ecosystem protection measures, and wildfire risk reduction interventions that directly address the growing impacts of droughts, floods, and extreme heat on oasis systems. Specifically, financing supports the construction and rehabilitation of diversion weirs, solar-powered boreholes, traditional khetaras, and flood protection structures to achieve Outcome 1 – “Strengthened resilience of oasis ecosystems to climate hazards through integrated natural resource management and enhanced wildfire prevention”.
149. These investments convert financial resources into climate-proofed, low-carbon assets that improve water availability, stabilize agricultural production, and reduce exposure to climate-induced shocks. The deployment of solar-powered water infrastructure further strengthens sustainability by reducing operational and energy costs, limiting exposure to fuel price volatility, and ensuring continuity of water services in remote oasis areas. By combining water efficiency, renewable energy, and ecosystem-based approaches, the investments significantly reduce exposure to climate-induced shocks, including droughts, floods, and extreme heat, while enhancing the long-term resilience of oasis livelihoods and ecosystems. Sustainability of these investments is ensured through complementary mechanisms at multiple levels.
150. **Institutional sustainability:** The sustainability of hydro-agricultural infrastructure will be anchored in Morocco's established co-management model. AUEA will be established or strengthened and formally recognized through municipal and communal development plans. Clear role-sharing arrangements will be defined between AUEAs, local authorities, and relevant public institutions (including ORMVAO and basin-level actors), ensuring long-term local ownership, accountability, and coordination for routine operation, minor maintenance, and conflict resolution.
151. **Financial sustainability:** At the concept-note stage, no formal commitment or dedicated municipal budget allocation for project operation and maintenance has yet been secured. However, the January 2026 stakeholder consultations with local authorities and other relevant stakeholders confirmed the relevance of integrating operation and maintenance requirements into local planning and institutional arrangements. During project formulation and implementation, a dedicated O&M financing mechanism will therefore be established, combining water-user contributions, AUEA membership fees, and, where feasible, municipal

budget allocations, in line with Moroccan irrigation cost-recovery practices. These resources will be consolidated into local maintenance funds earmarked for preventive maintenance and minor repairs. Additional revenues generated from sustainable oasis-based value chains, including date products and aromatic and medicinal plants, will further contribute to the financial viability of O&M beyond the project lifespan.

152. **Regulatory and governance sustainability:** *A participatory operating and management agreement, inspired by the Feija aquifer contract model, will formalize governance arrangements for the coordinated management of surface and groundwater resources. This agreement will define water allocation rules, maintenance responsibilities, decision-making procedures, and enforcement mechanisms, and will involve water users, local authorities, basin agencies, and sectoral services, ensuring regulatory clarity, transparency, and compliance with national water legislation.*
153. **Technical and environmental sustainability:** *The project will promote sustainable irrigation and ecosystem-based water management practices, including efficient irrigation technologies, groundwater protection measures, and integrated wildfire risk management. Continuous capacity building of AUEAs, communal technicians, and water operators will support adaptive operation and maintenance, reduce the risk of infrastructure degradation, and prevent over-exploitation of water and land resources, thereby safeguarding long-term environmental integrity.*
154. *In parallel, resources allocated to wildfire prevention and ecosystem management support targeted activities such as biomass clearing, installation of emergency water points, deployment of early warning systems, and community-based preparedness measures. These interventions, by deliberately combining hard infrastructure investments with institutional strengthening, regulatory frameworks, community engagement, and ecosystem-based adaptation, Component 1 ensures that Adaptation Fund resources generate durable, landscape-level resilience outcomes that persist well beyond the project lifetime. Under Component 2: Enhancing the resilience of pastoral ecosystems and livelihoods, resources are strategically allocated to reduce the climate vulnerability of pastoral and agro-pastoral systems that are highly exposed to drought, water scarcity, and land degradation to achieve the Outcome 2 – “Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions”.*
155. *Adaptation Fund financing supports the establishment of solar-powered pastoral water points and climate-adapted livestock shelters. These investments directly address water and heat stress constraints, reduce livestock mortality, limit pressure on fragile rangelands, and help prevent resource-related conflicts. Adaptation Fund resources support ecosystem restoration and livelihood diversification through the sustainable cultivation and commercialization of aromatic and medicinal plants. Investments in land restoration, nurseries, and value-chain development transform degraded areas into productive, climate-resilient landscapes, generating alternative income opportunities particularly for women while enhancing biodiversity. These interventions strengthen pastoral and farming systems by improving water security, protecting livestock, restoring rangelands, and promoting climate-adapted production systems. By combining infrastructure investments with nature-based solutions, the component delivers integrated adaptation and socio-economic resilience outcomes. Long-term sustainability is ensured through complementary mechanisms:*
156. **Institutional sustainability:** *The operation and maintenance of livestock infrastructure will be anchored in Morocco's community-based pastoral governance system. Pastoral associations, cooperatives, and local AUEA structures will be established or strengthened and formally recognized by communal and provincial authorities, in coordination with decentralized services of the Ministry of Agriculture (ONSSA, livestock services). Clear mandates will be defined for routine operation, minor maintenance, surveillance, and conflict management, ensuring long-term local ownership and accountability.*
157. **Financial sustainability:** *A local maintenance financing mechanism will be established, combining pastoral user contributions, cooperative membership fees, and communal budget allocations, in line with national rangeland and livestock development practices. Maintenance funds will be earmarked for preventive upkeep of watering points, vaccination parks, and pastoral infrastructure. Where applicable, revenues generated from livestock-related value chains (milk, meat, fattening activities, fodder production, manure valorization) will contribute to sustaining operation and maintenance beyond project completion.*
158. **Regulatory and governance sustainability:** *Maintenance arrangements will be formalized through local management agreements inspired by Morocco's participatory governance models for common-pool resources. These agreements will define access rights, infrastructure use rules, maintenance responsibilities, seasonal*

mobility arrangements, and enforcement mechanisms. They will involve pastoral users, communal authorities, technical services, and basin-level actors, ensuring coherence with national legislation on rangeland management, animal health, and water resources.

159. **Technical and environmental sustainability:** The project promotes sustainable pastoral and livestock management practices, including rotational grazing, protection of watering points, controlled access to rangelands, and climate-resilient design of infrastructure. Continuous capacity building of pastoral associations and local technicians will support routine maintenance, basic repairs, animal health management, and wildfire prevention in grazing areas, thereby reducing infrastructure degradation and pressure on fragile ecosystems.
160. Component 3 uses resources to address the structural drivers of vulnerability in oasis communities, notably limited livelihood diversification, low adaptive capacity, and weak access to climate-resilient economic opportunities to achieve Outcome 3 – “Strengthened resilient oasis agriculture and economic empowerment of local communities”. The funds support capacity building, technical assistance, and organizational strengthening for farmers, cooperatives, women, and youth. Investments in climate-smart and organic agriculture enhance water-use efficiency, soil fertility, and productivity, enabling communities to adapt to increasing climate variability while accessing higher-value and more resilient markets. The US\$1,663,894 allocated to Component 3 represents the incremental investment required to address the climate-related vulnerability of oasis livelihoods beyond conventional agricultural and economic development support. The financing will cover climate-resilient and organic agricultural practices, value-chain strengthening, capacity building, and targeted support to women- and youth-led entrepreneurship. These investments are necessary to reduce exposure to water scarcity, drought-related production losses and declining agricultural productivity while diversifying income sources. The allocation is therefore justified by the combined need to strengthen adaptive capacity and sustain climate-resilient livelihoods among vulnerable oasis communities.
161. AF-supported activities promote diversified and climate-resilient income-generating opportunities, including organic oasis agriculture, value-chain development for oasis products, improved marketing channels, and product labeling. These interventions strengthen market access and income stability, allowing households to maintain livelihoods despite climate stress. Targeted training for women and youth, combined with support to locally led innovative initiatives, fosters entrepreneurship, self-employment, and inclusive participation in economic activities. Resources allocated to entrepreneurship and employment promotion further enable business development services, start-up support, and facilitated access to finance for climate-resilient enterprises. By prioritizing women and young people, Component 3 ensures inclusive adaptation benefits while strengthening local economies and reducing dependence on highly climate-sensitive livelihoods. Long-term sustainability under Component 3 is ensured through integrated institutional, financial, technical, and social mechanisms:
162. **Institutional sustainability:** Capacity-building and governance interventions will be institutionalized within existing local and sectoral structures, including communal authorities, professional organizations, AUEA, pastoral associations, women’s and youth cooperatives, and decentralized technical services. Training curricula, governance tools, and participatory planning mechanisms developed under the project will be integrated into communal development plans (PCD) and sectoral programs, ensuring continuity beyond the project lifecycle.
163. **Financial sustainability:** The continuation of governance and capacity-strengthening activities will be supported through communal budget allocations, cost-sharing mechanisms with professional organizations, and integration into ongoing public programs (e.g. agricultural extension, pastoral support, disaster risk management). Revenues generated from strengthened local value chains and services will further contribute to sustaining community-level coordination, monitoring, and facilitation functions.
164. **Regulatory and governance sustainability:** The project will reinforce participatory governance frameworks consistent with Morocco’s decentralization and water and rangeland governance systems. Local coordination platforms and operating procedures will be formalized through communal decisions, internal by-laws of associations, and local agreements, ensuring clarity of roles, transparency, social accountability, and inclusive decision-making, including representation of women and youth.
165. **Technical and social sustainability:** A continuous training-of-trainers (ToT) approach will be adopted to build a permanent pool of local facilitators, extension agents, and community leaders capable of sustaining adaptive management practices. Emphasis will be placed on knowledge transfer, peer learning, and locally adapted tools (early warning dissemination, participatory monitoring, conflict prevention, grievance redress mechanisms), strengthening long-term social cohesion and adaptive capacity.

166. *Component 4 ensures that Adaptation Fund resources are efficiently managed, transparently monitored, and strategically leveraged for learning and replication. Adaptation Fund financing supports the establishment and operation of a dedicated Project Management Unit, ensuring sound financial management, procurement, safeguards compliance, and coordination across all components. This guarantees that resources are translated into timely and high-quality implementation. Through Outcome 4, resources also finance robust monitoring, evaluation, and learning system, including baseline studies, regular monitoring, and independent evaluations. This enables adaptive management, accountability, and evidence-based decision-making throughout the project lifecycle. Finally, resources allocated to knowledge management ensure that lessons learned, good practices, and innovation models are documented and disseminated at local, national, and regional levels. This maximizes the impact of AF resources beyond the project's direct beneficiaries by supporting scaling-up and replication of successful adaptation approaches. The US\$515,000 allocated to Component 4 represents the incremental cost of establishing a functional knowledge, monitoring and adaptive-management system beyond routine project compliance requirements. The financing will support baseline and regular monitoring, learning and evaluation, knowledge products, dissemination and replication of successful adaptation practices. These functions are essential to generate evidence on what works, enable timely adjustment of interventions, and ensure that the adaptation benefits and lessons generated by the project can be sustained and replicated beyond the Draa Basin.*
167. *The four outcomes together constitute an integrated adaptation package that addresses climate risks across ecosystems, livelihoods, institutions, and governance. Climate-resilient water management and ecosystem protection (Outcome 1), strengthened pastoral and rangeland resilience through nature-based solutions (Outcome 2), diversified and climate-resilient livelihoods with enhanced adaptive capacity (Outcome 3), and robust project management, monitoring, and knowledge sharing (Outcome 4) work in a mutually reinforcing manner. Adaptation Fund resources translate into tangible, durable, and scalable adaptation benefits by combining infrastructure investments, ecosystem-based approaches, capacity development, inclusive economic opportunities, and strong governance mechanisms, thereby delivering sustained resilience for vulnerable communities and enabling long-term replication beyond the project lifetime.*

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

168. *The project is classified as Category B in accordance with the Adaptation Fund Environmental and Social Policy, as its activities include small-scale infrastructure rehabilitation, ecosystem restoration, and livelihood support measures that may result in localized, temporary, and reversible environmental and social risks.*
169. *The environmental and social screening indicates that the proposed project will generate overall positive environmental and social impacts, with no significant, irreversible, or transboundary adverse impacts anticipated (Principles 1, 11). The project focuses on ecosystem-based adaptation, rehabilitation of existing infrastructure, and inclusive livelihood support within established oasis, pastoral, and agricultural systems, thereby limiting exposure to high environmental and social risks (Principles 8, 9, 10, 15). Potential environmental risks are mainly localized, temporary, and low to moderate in magnitude. These include short-term disturbances during construction and rehabilitation works, such as dust emissions, waste generation, soil disturbance, and temporary impacts on natural habitats (Principles 9, 12, 15), as well as cumulative risks related to biodiversity management and increasing climate stress (Principles 10, 11). These risks are mitigated through climate-proofed infrastructure design, prioritization of nature-based solutions, use of native and climate-resilient species, erosion control measures, and technical oversight by competent national authorities (Principles 1, 9, 10, 11). No impacts on international watercourses, shared aquifers, or transboundary ecosystems are expected (Principle 1). Potential social risks are primarily indirect and relate to access, equity, and inclusion. There is a moderate risk that water and livelihood investments could disproportionately benefit upstream or well-organized users if equity considerations are not actively managed (Principle 2), as well as risks of under-representation of women, youth, and pastoral households in decision-making and benefit-sharing (Principles 3 and 5). These risks are addressed through participatory site selection, inclusive governance arrangements (notably through AUEAs and community organizations), targeted gender- and youth-responsive measures, and equity-sensitive monitoring indicators (Principles 2, 3, 5). No physical or economic displacement is anticipated, as interventions are implemented on existing agricultural, communal, or public lands, and the project explicitly avoids land acquisition (Principle 8). Cultural heritage risks are low and managed through the use of traditional materials and techniques and the engagement of local craftsmen in the rehabilitation of khetaras and seguías (Principle 14). Labor and public health risks associated with temporary work are minor and mitigated through compliance with national labor laws, occupational health and safety measures, and contractor supervision (Principles 6 and 13). Human rights risks are low and*

addressed through transparent beneficiary selection, accessible grievance mechanisms, and continuous stakeholder engagement (Principle 4). Overall, the project is assessed as low to moderate environmental and social risk, with all identified risks being manageable through standard mitigation measures, institutional coordination, and adaptive management mechanisms embedded under Component 4 (Principles 1, 4, 6, 11). The project is therefore considered fully aligned with the Environmental and Social Principles while delivering significant adaptation, equity, and ecosystem co-benefits for the Draa Basin.

Table 11: Checklist of Environmental and Social Principles: Risk Screening and Management Measures

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		<i>Risk:</i> There is a risk of non-compliance with applicable national legal and regulatory requirements if permits, environmental authorizations, water-resource approvals, land-use requirements, construction standards, or other statutory procedures are not properly identified and obtained before implementation. The risk is particularly relevant to water infrastructure, boreholes, flood-protection works, land restoration and rehabilitation of traditional irrigation systems. No transboundary impacts are anticipated. <i>Magnitude:</i> Low. <i>Mitigation:</i> All activities will be implemented in full compliance with applicable national legislation and regulatory frameworks. Formal coordination will be ensured with relevant water, environmental, and land management authorities, and all required permits and authorizations will be obtained prior to commencement of works.
Access and Equity		<i>Risk:</i> There is an indirect risk that water and infrastructure investments could disproportionately benefit upstream users or well-organized groups, potentially limiting access for downstream or tail-end users (Aâlif), women, youth, and small-scale pastoralists if equity considerations are not actively managed. <i>Magnitude:</i> Moderate. <i>Mitigation:</i> - Participatory site selection and beneficiary mapping will be conducted with AUEAs, cooperatives, pastoral associations, women's and youth groups, local authorities, and technical services. - Tail-end users (Aâlif), women, youth, smallholder farmers, and pastoral groups representatives will be included in local consultations and validation processes and, where relevant, represented in AUEAs and local water governance structures, to support inclusive decision-making. - Site and beneficiary selection will follow transparent, multi-criteria procedures based on climate vulnerability, water scarcity, exposure to droughts, floods, and wildfire risks, downstream or tail-end location and water access constraints, socio-economic vulnerability, dependence on climate-sensitive livelihoods, and inclusion of vulnerable groups. - For water infrastructure, flood protection works, land restoration, training, livelihood support and entrepreneurship activities, beneficiary lists and site choices will be reviewed locally to reduce the risk of benefit capture by better-organized or upstream groups. - Equity-sensitive indicators, disaggregated location, gender, age, livelihood type and pastoral status, will be integrated into the M&E framework, with upstream/downstream tracking where relevant. - Concerns related to unequal access will be addressed through the project grievance redress mechanism, and adaptive management mechanisms under Component 4 will allow corrective measures if inequitable access is detected.
Marginalized and Vulnerable Groups	✓	<i>Risk:</i> There is an indirect risk that women, youth, and pastoral households may face barriers to participation in decision-making, access to assets, or benefit-sharing due to social norms, mobility constraints, or limited institutional voice. <i>Magnitude:</i> Low. <i>Mitigation:</i> - Targeted inclusion measures across Components 2 and 3 (women- and youth-led cooperatives, entrepreneurship support, tailored training schedules). - Quotas and participation targets for women (40%) and youth (20%) in trainings, governance bodies, and livelihood support. - Capacity building for local institutions on inclusive resource governance.
Human Rights		<i>Risk:</i> There is a low risk that unequal access to project-supported water, livelihood or natural-resource benefits, or inadequate access to information and grievance mechanisms, could indirectly affect the rights and legitimate interests of vulnerable groups. Particular attention is required for women, youth, small-scale farmers and pastoral households that may have limited influence in local decision-making. <i>Magnitude:</i> Low. <i>Mitigation:</i> - Transparent selection criteria for beneficiaries and sites; consultations and information will be accessible to affected stakeholders. - Accessible grievance redress mechanism (GRM) managed by the PMU and local authorities. - Continuous stakeholder engagement and feedback loops.
Gender Equality and Women's Empowerment		<i>Risk:</i> There is a direct risk that women may be excluded from decision-making or benefit disproportionately less from infrastructure and livelihood interventions. <i>Magnitude:</i> Moderate. <i>Mitigation:</i> - Gender-responsive design across all components. - Dedicated support to women's cooperatives (PAM, processing, entrepreneurship). - Gender-disaggregated indicators and monitoring under the MEKM system.
Core Labour Rights		<i>Risk:</i> Temporary employment generated by construction, rehabilitation, restoration and maintenance activities may create risks related to working conditions, occupational health and safety, fair treatment, and compliance with core labour standards. Particular attention will be given to preventing child labour, forced labour, discrimination and unsafe working conditions. <i>Magnitude:</i> Low. <i>Mitigation:</i> - Compliance with national labor laws. - Basic OHS measures for workers. - Contractor clauses on labor standards. Contractor monitoring by the ORMVOA and ADA

Indigenous Peoples	✓	Risk: There is <u>no risk</u> that IP may be overlooked, since project areas do not include distinct indigenous peoples as defined under ESP standards.
Involuntary Resettlement	✓	Risk: There is a low risk of temporary access restrictions during works, and no physical or economic displacement is anticipated. Interventions are implemented on existing agricultural, communal, or public lands. Magnitude: Low. Mitigation: · Avoidance of land acquisition and resettlement. · Prior consultation and community validation of sites. · Voluntary use agreements where applicable. · Works scheduled to minimize disruption
Protection of Natural Habitats	✓	Risk: There is a direct risk of Temporary disturbance during works in sensitive oasis and rangeland ecosystems. Magnitude: Low to Moderate Mitigation: · Ecosystem-based design and NbS prioritized. · Restoration of degraded land and native species planting during site restoration post-works. · Technical oversight by ANEF and HCEFLCD.
Conservation of Biological Diversity	✓	Risk: There is a potential cumulative risk that inappropriate species selection or planting density could affect local biodiversity composition and ecosystem resilience over time. Magnitude: Low. Mitigation: Exclusive use of native and locally adapted, climate-resilient species; technical validation by forestry and biodiversity authorities (ANEF/HCEFLCD); and periodic biodiversity monitoring to assess ecosystem recovery and species performance.
Climate Change		Risk: There is a cumulative risk that successive and more severe drought events could exceed the adaptive capacity of restored ecosystems and climate-resilient infrastructure over time. Magnitude: Moderate. Mitigation: Climate-proofed design of water and flood protection infrastructure; selection of highly drought- and heat-tolerant plant species; integration of early warning systems; and adaptive management through periodic climate risk reassessments under the MEKM framework.
Pollution Prevention and Resource Efficiency	✓	Risk: There is a direct risk of temporary dust emissions, construction waste generation, and localized water turbidity during rehabilitation and construction works. Magnitude: Low. Mitigation: Implementation of site-specific waste management plans; dust suppression measures; proper storage and disposal of materials; and efficient use of water and construction inputs.
Public Health	✓	Risk: There is a direct risk of minor public safety incidents near construction and rehabilitation sites. Magnitude: Low. Mitigation: Clear site demarcation and fencing; community information and awareness measures; and enforcement of occupational health and safety (OHS) protocols for workers and contractors.
Physical and Cultural Heritage	✓	Risk: There is a potential risk that rehabilitation of traditional khettaras and seguias could affect their architectural integrity or cultural value if modern techniques are inappropriately applied. Magnitude: Low Mitigation: Engagement of local Maâlems (traditional craftsmen); use of traditional materials and construction techniques; and supervision by heritage-sensitive technical experts in coordination with local authorities.
Lands and Soil Conservation	✓	Risk: There is a direct risk of localized soil disturbance and an indirect risk of erosion during construction and restoration works. Magnitude: Low. Mitigation: Application of soil conservation and erosion control measures; phased works to minimize exposure; and rehabilitation and stabilization of disturbed areas following completion of activities.

PART III: IMPLEMENTATION ARRANGEMENTS

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

170. The general and specific objectives of the proposed project, as well as its expected results, are aligned with four Adaptation Fund outcomes: **Outcome 3: “Strengthened awareness and ownership of adaptation and climate risk reduction processes”**; **Outcome 4: “Increased adaptive capacity within relevant development sector services and infrastructure assets”**; **Outcome 5: “Increased ecosystem resilience in response to climate change and variability-induced stress”**; and **Outcome 6: “Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.”** The table below maps the project objectives and expected results to these Adaptation Fund outcomes, their corresponding indicators, and the associated grant allocations..

Table 12: Project Objectives, Adaptation Fund Outcomes, and Grant Allocation

Project Objective(s) ⁷⁵	Project Objective Indicator(s)	Adaptation Fund Outcome	Adaptation Fund Outcome Indicator	Grant Amount (USD)
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⁷⁵<https://www.adaptation-fund.org/apply-funding/project-funding/project-proposal-materials/alignment-with-adaptation-fund-results-framework-template-and-guidance-nov-2025/>

Objective 1: Strengthen the adaptive capacity and resilience of oasis ecosystems	- Communities benefiting from climate-resilient water, flood and fire protection systems by project completion - Climate-resilient water infrastructure assets constructed, rehabilitated or operational by project completion - Area of oasis ecosystems and palm groves under improved risk reduction and climate-resilient management by the end of the project	Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	12,140,000
Objective 2: Enhance the resilience of pastoral ecosystems and livelihoods	Climate-resilient water infrastructure assets constructed, rehabilitated or operational for pastoral communities by project completion Rangeland and oasis areas under improved biodiversity-friendly and climate-resilient management by project completion	Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	2,400,000
Objective 3: Diversify climate-resilient livelihoods and promote inclusive socio-economic development.	Climate-resilient agricultural value chains and enterprises, including women- and youth-led enterprises, created or strengthened by project completion - Farmers and local organizations adopting climate-resilient and organic agricultural practices by project completion	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods	1,663,894
Objective 4: Strengthen adaptive management, knowledge generation and learning to support evidence-based decision-making and the replication of climate-resilient practices	Institutions applying strengthened capacity to capture, disseminate and apply climate resilience knowledge for adaptation planning and decision-making by project completion - Climate-resilient practices, approaches or management measures replicated or scaled up based on project learning by project completion	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes	3.2. Percentage of targeted population applying appropriate adaptation responses	515,000
Total objective level grant amount				16,718,894
Project Outcome(s)	Project Outcome Indicator(s)	Adaptation Fund Output	Adaptation Fund Output Indicator	Grant Amount (USD)
Outcome 1. Improved access to water and strengthened hydrological resilience in oasis areas	- Number of operational emergency water points - Emergency water points operational by project completion - Traditional water infrastructure rehabilitated or constructed and providing water under climate variability and change by project completion - Solar-powered boreholes operational by project completionsolar-powered boreholes	Output 4.1: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	12,140,000
Outcome 2. Enhanced resilience of ecosystems and pastoral livelihoods through sustainable rangeland management and the implementation of nature-based solutions	- Areas under biodiversity-friendly management by project completion - Aromatic and medicinal plant species sustainably managed or cultivated by project completion	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	2,400,000
Outcome 3. Strengthened resilient oasis agriculture and economic empowerment of local communities	- Number of solar-powered irrigation systems installed or operational - Percentage of supported enterprises adopting climate-smart practices	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.2.1. Type of income sources for households generated under climate change scenario	1,663,894
Outcome 4: Enhanced knowledge management and learning for informed decisions, adaptive management, and replication of good practices.	- Number of people and institutions with strengthened adaptive capacity and climate-resilient livelihood practices	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	515,000
Total output level grant amount				16,718,894

171. Grant amounts presented in Table 12 were derived from the project budget (Table 4) by aggregating the costs of all activities contributing to each output. Output allocations were subsequently aggregated to determine the corresponding outcome budgets, associated with each project-specific objective (project component). This ensures full consistency between the AF Results Framework, the Project Components and Financing Table, and the detailed project budget.

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

A. Record of endorsement on behalf of the government

Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments as possible if a regional project/programme:

ROYAUME DU MAROC MINISTÈRE DE LA TRANSITION ÉNERGETIQUE ET DU DÉVELOPPEMENT DURABLE Département du Développement Durable DCDB	 14 FEV. 2025	المملكة المغربية - AL-MULKIYA AL-MAGHRIBIYA - وزارة الانتقال الطاقي والتنمية المستدامة K.C.U. D+ I C I H H I I F R E D H A H E C C K + 0 2 6 . 2 6 قطاع التنمية المستدامة C C O I I F E C C K + 0 2 6 . 2 6 م.د.ت.م.د.
To : The Adaptation Fund Board c/o : Adaptation Fund Board Secretariat Email : secretariat@adaptation-fund.org Fax : 2025223240/5		
Subject: Endorsement for "Strengthening the Resilience of Oasis Ecosystems and Enhancing the Adaptive Capacities of the Draa Basin Communities to Climate Change".		
We would like to refer to the project "Strengthening the Resilience of Oasis Ecosystems and Enhancing the Adaptive Capacities of the Draa Basin Communities to Climate Change," which is included in the funding proposal submitted by the Agency for Agricultural Development (ADA). In our capacity as the Adaptation Fund Focal Point for Morocco, we acknowledge having reviewed the proposal and hereby endorse the proposed project as outlined in the Concept Note. By conveying our endorsement, we wish to clarify that: - The Government of Morocco certifies that the project is a national priority and has its full support. - The project, as presented in the Concept Note, aligns with Morocco's National Strategic Adaptation Plan. - The project, as outlined in the Concept Note, complies with relevant national laws and regulations and adheres to the Adaptation Fund's environmental and social safeguards. We acknowledge that this letter will be made publicly available on the Adaptation Fund website. Please accept our kind regards.		
Mr Mohammed BARAOUI Director of Climate and Biodiversity Directeur du Climat et de la Diversité Biologique Mohammed BARAOUI		
9, Avenue Al Attazi, secteur 16, Hay Riad - Rabat ☎ +212 (0)537570470 - fax : +212 (0)537570472 www.aad.gov.ma 9, شارع العبدازي، قطاع 16، حي الرياض - الرباط ☎ +212 (0)537570470 - fax : +212 (0)537570472 www.aad.gov.ma		

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

A. 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 (NDC 3.0, the National Adaptation Plan of Morocco, the Green Generation Strategy ...) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund</u> and on the understanding that the implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.	
<u>Implementing Entity Coordinator:</u> Mr. El Mahdi ARRIFI General Director Agency for Agricultural Development (ADA) Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests – Morocco 	
Date: 04th December 2025	Tel. and email: +2126-57-83-19-83 arrifi.elmahdi@ada.gov.ma
<u>Project Contact Person:</u> Ms Meryem ANDALOUSSI Head of Environment Service Tel. And Email: +2126-61-56-57-81 m.andalousi@ada.gov.ma / meryem.andalousi@gmail.com	

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



ROYAUME DU MAROC

MINISTÈRE DE L'AGRICULTURE, DE LA PÊCHE
MARITIME, DU DÉVELOPPEMENT RURAL
ET DES EAUX ET FORÊTS

CHAMBRE D'AGRICULTURE DE LA RÉGION
DRAA TAFILALET



Je soussigné, Monsieur Alt Lhaj Abdelkarim, Président de la Chambre Régionale d'Agriculture de Drâa-Tafilalet, confirme par la présente l'engagement ferme et inconditionnel de notre institution à soutenir et participer à la mise en œuvre du projet "Renforcement de la résilience des écosystèmes oasiens et des capacités adaptatives des communautés du bassin du Draa", soumis pour financement au Fonds d'Adaptation.

La Chambre d'Agriculture considère ce projet comme une priorité stratégique pour la région, en parfaite adéquation avec la stratégie "Génération Green 2020-2030", notamment pour la sauvegarde des oasis face au stress hydrique et aux changements climatiques.

Ainsi, et compte tenu de l'importance de ce projet innovant pour la sauvegarde et la résilience des oasis et des populations oasiennes face au changement climatique, la Chambre d'Agriculture, en tant qu'acteur institutionnel régional, contribuera de manière inconditionnelle à la mobilisation des bénéficiaires et à la mise en œuvre dudit projet soumis au financement par l'ORMVAO, établissement désigné comme porteur du projet.

Il y a lieu de rappeler que la Chambre d'Agriculture a mis en œuvre avec succès plusieurs projets en partenariat avec l'ORMVAO, où les deux institutions ont accompagné des Groupements d'Intérêt Économique (GIE), des coopératives, des associations féminines et des organisations de producteurs (rose, dattes...), ainsi que des transhumants (puits équipés en solaire...) dans le renforcement de leurs techniques de production, transformation et commercialisation de produits agricoles.



Le Président de la
Chambre d'Agriculture
de la Région
Drâa-Tafilalet
Abdelkarim ALT LHAJ

Chambre d'Agriculture de la Région Drâa Tafilalet, Avenue Mly Ali Cherif, BP 539 L
Errachidia

Tél : 0535.79.10.70/24.20 // Fax : 0535.79.10.65



Revised PFG Submission Form¹
Project Formulation Grant (PFG)

Submission Date: 16th July 2026

Adaptation Fund Project ID:

Country/ies: Morocco

Title of Project/Programme: Strengthening the Resilience of Oasis Ecosystems and Improving the Adaptive Capacity of Communities in the Draa Basin to Climate Change

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

Implementing Entity: Agricultural Development Agency (ADA)

Executing Entity/ies: Office Régional de Mise en Valeur Agricole de Ouarzazate (ORMVAO)

A. Project Preparation Timeframe

Start date of PFG	1 st January 2027
Completion date of PFG	31 st May 2027

B. Proposed Project Preparation Activities (\$)

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note²
Project Feasibility study, including Technical feasibility study for all the project's activities	Feasibility study of the project	32,000	Covers a full feasibility assessment of the project, including technical feasibility for all proposed activities and overall project viability. This includes evaluating technical specifications, operational requirements, cost estimates, risk factors, and potential environmental and social implications. The study will validate design assumptions, assess infrastructure and technology options, and ensure alignment with national development priorities and Adaptation Fund requirements. Findings will confirm the project's practicality, scalability, and sustainability before implementation.

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

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

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note ²
			Expertise Required: • Project Feasibility Specialist experienced in climate adaptation and infrastructure projects. • Technical Experts relevant to each component (e.g., water resource management, agriculture, pastoral systems, renewable energy). • Environmental and Social Safeguards Specialist to integrate risk mitigation measures. • Economist/Financial Analyst for cost-effectiveness and value-for-money analysis. Policy and Institutional Specialist to ensure alignment with regulatory frameworks and governance structures.
Gender study and action plan (including consultation)	Existing gender inequalities within the project's implementation area and sector are assessed to inform project design and ensure equitable access to benefits for men, women, and youth. The assessment also examines the roles of women and youth in post-harvest processing and supports the development of sex-disaggregated indicators. Based on these findings, a dedicated action plan is prepared to operationalize the project's social inclusion strategy and guarantee its effective implementation.	20,000	Funds will support a gender analysis to assess existing inequalities, roles of women and youth, and barriers to equitable access in the project area and sector. Activities include stakeholder consultations, development of sex-disaggregated indicators, and preparation of a Gender Action Plan to guide social inclusion and ensure compliance with the Adaptation Fund Gender Policy. Expertise Required: • Gender and Social Inclusion Specialist with experience in climate change and agriculture/livelihood projects. • Facilitators/Consultants skilled in participatory consultations with local communities, especially women and youth. • M&E Expert to integrate gender-responsive indicators into the project results framework.
Environment and Social Impact Assessment (ESIA)	The environmental and social risks and impacts associated with project implementation	24,000	Covers the systematic assessment of environmental and social risks/impacts linked to project implementation,

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note ²
and Environmental as Social Management Framework (ESMF) (including consultation)	are systematically assessed, and an action plan is formulated to eliminate, mitigate, and/or manage these risks. Findings from this assessment inform the development of the Environmental and Social Management Plan (ESMP) or Environmental and Social Management Framework (ESMF) and the establishment of the project's compliance and grievance mechanisms. This process ensures full alignment of the project with the Environmental and Social Policy of the Adaptation Fund as well as with national environmental and social standards.		stakeholder consultations, and preparation of the ESMF. Outputs include risk mitigation and management measures, a compliance framework, and grievance mechanisms, ensuring alignment with the Adaptation Fund's Environmental and Social Policy and national standards. Expertise Required: • Environmental Safeguards Specialist with experience in climate adaptation/agriculture projects. • Social Safeguards Specialist skilled in stakeholder engagement and conflict-sensitive approaches. • Legal/Policy Expert familiar with national environmental and social regulations. • Facilitators for community consultations to gather inclusive inputs.
Stakeholder engagement (including consultation)	A stakeholder matrix for the project in Niger is developed and analysed to identify each stakeholder's capacities, level of influence, roles, and associated financial risks, along with the mitigation measures required. This analysis includes the categorisation of stakeholders and defines how, and at what levels, they should be engaged to ensure effective implementation and the long-term sustainability of the project beyond its closure.	20,000	Funds the development and analysis of a stakeholder matrix for the project in Niger, mapping each stakeholder's capacities, influence, roles, and related financial risks, alongside mitigation measures. This includes stakeholder categorization and a tailored engagement strategy to ensure active participation during implementation and sustained involvement post-project for long-term sustainability. Expertise Required: • Stakeholder Engagement Specialist with experience in climate adaptation and rural development. • Social Development Expert skilled in participatory approaches and inclusivity (gender, youth, vulnerable groups). • Risk Analyst to assess and mitigate financial and

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note ²
			operational risks tied to stakeholders. Facilitators/Moderators for multi-level consultations and consensus building.
Cost benefit analysis	A comprehensive assessment report detailing current socio-economic conditions and livelihood patterns in the target areas is drafted, with an identification and documentation of key barriers to economic opportunities, productive assets, and access to essential services. Detailed mapping of institutional frameworks and value chain dynamics, including gender roles and cooperative structures is documented. And, quantified projections of anticipated changes in household income, employment levels, and resilience indicators known. Completed economic and financial sustainability analysis fully aligned with Adaptation Fund requirements.	20,000	Funds a comprehensive assessment of current socio-economic conditions, livelihood systems, and barriers to economic opportunities in the target areas. This includes mapping productive assets, access to essential services, institutional frameworks, and value chain dynamics (with attention to gender roles and cooperative structures). The analysis will quantify expected changes in household income, employment, and resilience indicators, and produce a economic and financial sustainability assessment to guide long-term impact and scalability. Expertise Required: - Socio-Economic Specialist experienced in rural development, livelihoods analysis, and gender-sensitive assessments. - Financial/Economic Analyst with expertise in cost-benefit analysis, investment planning, and economic modelling. - Institutional Development Expert for mapping governance and cooperative structures. - Value Chain Specialist to assess market linkages, income diversification, and resilience pathways.
Full Proposal Development, including technical design, results framework, implementation arrangements, and stakeholder consultation	A complete Full Proposal package is prepared in line with the Adaptation Fund requirements and submission templates. This includes the consolidation of all technical studies and assessments into a coherent project document, development of detailed project components and activities, preparation of the	23,000	Covers the preparation and drafting of the Full Proposal package, including technical writing, consolidation of studies and assessments, stakeholder consultations, validation workshops, and finalization of all required annexes and supporting documents in accordance with Adaptation Fund guidelines. Activities include refining project components, defining implementation and institutional

List of Proposed Project Preparation Activities	Output of the PFG Activities	US\$ Amount	Budget note ²
	results framework, budget, procurement plan, implementation arrangements, and monitoring and evaluation framework. The process also includes stakeholder consultations and validation workshops to ensure country ownership, technical quality, and alignment with national adaptation priorities and Adaptation Fund policies and standards.		arrangements, preparing the results framework and budget, integrating gender and environmental and social safeguard considerations, and ensuring consistency across all proposal sections prior to submission. Expertise Required: • Climate Finance/Project Development Specialist with experience in Adaptation Fund proposal preparation. • Technical Experts to support detailed design of project components and activities. • Monitoring, Evaluation, and Learning (MEL) Specialist to develop the results framework and indicators. • Financial/Procurement Specialist for budgeting, financial planning, and procurement arrangements. • Environmental and Social Safeguards Specialist to ensure compliance with Adaptation Fund policies. • Gender Specialist to integrate gender-responsive actions and indicators into the proposal. • Facilitators/Consultants to support stakeholder consultations and validation workshops.
IE fee (8.5%)	IE fees	11,000	
Total Project Formulation Grant		150 000	

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

List of Activities	Justification	US\$ Amount	Budget Note	Expertise Required
Project Feasibility Study (including technical feasibility for all activities)	Essential to confirm project viability before implementation. Validates technical design, operational feasibility, and financial soundness. Ensures alignment with national development priorities and AF requirements. The amount covers multidisciplinary expertise, data collection, analysis, and stakeholder validation workshops.	32,000	Conduct a full feasibility assessment covering all proposed activities, including technical specifications, operational requirements, cost estimates, risk analysis, and environmental/social implications. Validate design assumptions, assess infrastructure and technology options, and ensure alignment with national priorities and Adaptation Fund (AF) requirements. The study will confirm the project's practicality, scalability, and sustainability before implementation.	• Project Feasibility Specialist (climate adaptation & infrastructure) • Technical Experts (water resources, agriculture, pastoral systems, renewable energy) • Environmental & Social Safeguards Specialist • Economist/Financial Analyst • Policy & Institutional Specialist
Gender Study & Action Plan (including consultations)	Required to comply with the Adaptation Fund Gender Policy. Addresses gender gaps, ensures women/youth empowerment, and integrates gender-responsive indicators into project design. The budget covers community consultations, data collection, and expert facilitation.	20,000	Carry out a gender analysis to assess inequalities, roles of women and youth, and barriers to equitable access in the project area and sector. Activities include stakeholder consultations, development of sex-disaggregated indicators, and preparation of a Gender Action Plan to guide social inclusion and ensure compliance with the AF Gender Policy.	• Gender & Social Inclusion Specialist with climate/agriculture experience • Facilitators for participatory consultations • M&E Expert for gender-responsive indicators
Environmental & Social Impact Assessment (ESIA) and Environmental & Social Management Framework (ESMF) (including consultations)	Ensures environmental and social safeguards compliance with AF policy and national standards. Identifies, mitigates, and manages project risks. Budget covers expert assessments, field consultations, and framework preparation.	24,000	Undertake a systematic assessment of environmental and social risks and impacts from project implementation. Engage stakeholders through consultations, prepare an ESMF, or ESMP and establish compliance and grievance mechanisms. Ensure full alignment with the AF Environmental and Social Policy and national regulations.	• Environmental Safeguards Specialist • Social Safeguards Specialist • Legal/Policy Expert (environmental & social standards) • Community Consultation Facilitators

Stakeholder Engagement (including consultations)	Critical to secure stakeholder buy-in and sustain project outcomes. Informs engagement strategies and governance mechanisms for post-project sustainability. Budget supports workshops, participatory planning, and facilitation across levels.	20,000	Develop and analyse a stakeholder matrix mapping capacities, influence, roles, and related risks. Define stakeholder categories and tailored engagement strategies to ensure effective implementation and long-term sustainability beyond project closure.	• Stakeholder Engagement Specialist • Social Development Expert (inclusivity and participatory methods) • Risk Analyst • Consultation Moderators/Facilitators
Cost-Benefit Analysis	Establishes socio-economic baseline and evaluates expected impacts on income, employment, and resilience. Informs cost-benefit analysis and long-term sustainability strategy. Budget covers data collection, modelling, and expert economic analysis.	20,000	Assess current socio-economic conditions, livelihood systems, institutional frameworks, and value chain dynamics (with gender considerations). Quantify projected changes in income, employment, and resilience, and deliver an economic and financial sustainability analysis aligned with AF requirements.	• Socio-Economic Specialist • Financial/Economic Analyst • Institutional Development Expert • Value Chain Specialist
Full Proposal Development, including technical design, results framework, implementation arrangements, and stakeholder consultation	A complete Full Proposal package is prepared in line with the Adaptation Fund requirements and submission templates. This includes the consolidation of all technical studies and assessments into a coherent project document, development of detailed project components and activities, preparation of the results framework, budget, procurement plan, implementation arrangements, and monitoring and evaluation framework. The process also includes stakeholder consultations and validation workshops to ensure country ownership, technical quality, and alignment with national adaptation priorities and Adaptation Fund policies and standards.	23,000	Covers the preparation and drafting of the Full Proposal package, including technical writing, consolidation of studies and assessments, stakeholder consultations, validation workshops, and finalization of all required annexes and supporting documents in accordance with Adaptation Fund guidelines. Activities include refining project components, defining implementation and institutional arrangements, preparing the results framework and budget, integrating gender and environmental and social safeguard considerations, and ensuring consistency across all proposal sections prior to submission.	Expertise Required: • Climate Finance/Project Development Specialist with experience in Adaptation Fund proposal preparation. • Technical Experts to support detailed design of project components and activities. • Monitoring, Evaluation, and Learning (MEL) Specialist to develop the results framework and indicators. • Financial/Procurement Specialist for budgeting, financial planning, and procurement arrangements. • Environmental and Social Safeguards Specialist to ensure compliance with Adaptation Fund policies. • Gender Specialist to integrate gender-responsive actions and indicators into the proposal. • Facilitators/Consultants to support stakeholder consultations and validation workshops.

C. Implementing Entity

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

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Mr. El Mahdi ARRIFI <i>General Director Agency for Agricultural Development (ADA) Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests- Morocco</i>		16 th July 2026	Ms Meryem ANDALOUSSI Head of Environment Service	+2126-61-56-57-81	m.andaloussi@ada.gov.ma meryem.andaloussi@gmail.com